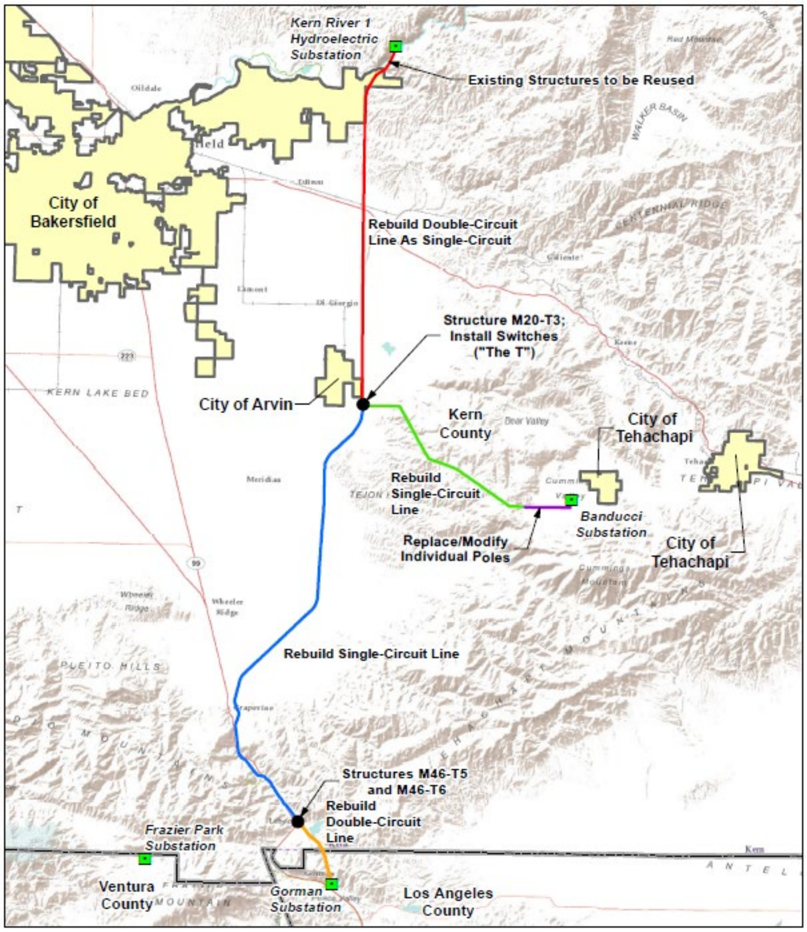



# Proponent's Environmental Assessment for Southern California Edison Company's TLRR Gorman-Kern River 66 kV Project

Q1 2022

Remove existing subtransmission structures, install new subtransmission structures, install telecommunications and system protection equipment, and modify equipment at existing substations.

The Gorman-Kern River 66 kV Project would be located in Kern County and Los Angeles County.

**Application of Southern California Edison Company (U 338-E) for a Permit to Construct Electrical Facilities with Voltages Between 50 kV and 200 kV: Gorman-Kern River Project to the California Public Utilities Commission**

*Prepared by Arcadis*
*320 Commerce*
*Suite 200*
*Irvine, CA 92602*
*Geetha Shanmugasundaram*
*Power Delivery Lead*
*213.262.3716*
*Geetha.Shanmugasundaram@arcadis.com*

*Prepared for Southern California Edison Company*
*2 Innovation Way*
*Pomona, CA 91768*
*Blanca G. Solares*
*Major Construction Project Manager*
*626.862.4379*
*Blanca.Solares@sce.com*

# TABLE OF CONTENTS

## TABLE OF TABLES

## TABLE OF FIGURES

## Required PEA Appendices and Supporting Materials[1]



[1] Note: SCE has provided those appendices and supporting materials identified as ‘Required’ in the CPUC’s *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent’s Environmental Assessments*; these appendices are presented in this PEA in the same order as presented in the *Guidelines*. Appendices I through O to this PEA contain supporting materials as referenced in this PEA document; these Appendices are not identified in the *Guidelines*. The ‘Potentially Required Appendices and Supporting Materials’ listed in the *Guidelines* are not provided as these are either unnecessary to support the environmental impact analyses or conclusions presented in this PEA document, or the preparation of such documents is premature.

Page intentionally left blank.

# 1 Executive Summary

This Chapter provides an Executive Summary for Southern California Edison Company's (SCE) proposed Gorman-Kern River 66 kilovolt (kV) Project (GKR Project).

## 1.1 GKR Project Summary

The GKR Project proposes to perform work along the existing Banducci-Kern River 1 66 kV Subtransmission Line, the existing Frazier Park-Gorman 66 kV Subtransmission Line, the existing Gorman-Kern River 1 66 kV Subtransmission Line, and substations associated with those lines. The sections below provide a summary of the purpose, objective, and proposed activities.

### 1.1.1 Purpose and Objective

The design of electric power lines in California is governed by the California Public Utility Commission's (CPUC's) General Order (GO) 95, Rules For Overhead Electric Line Construction. The purpose of the Rules contained within GO 95 is to formulate, for the State of California, requirements for overhead line design, construction, and maintenance, the application of which would ensure adequate service and secure safety to persons engaged in the construction, maintenance, operation or use of overhead lines and to the public in general.

The GKR Project is proposed to meet the following objectives: Comply with standards contained in CPUC GO 95; and address reliability concerns related to the condition of existing infrastructure on the affected subtransmission lines.

As described in Section 2.1.2 of this document, compliance would be attained through the remediation of discrepancies along the existing 66 kV subtransmission lines.[2] The remediation of the discrepancies is designed to comply with standards contained in the CPUC's GO 95—specifically the standards contained in Rule 37, Minimum Clearances of Wires above Railroads, Thoroughfares, Buildings, Etc., Table 1; Rule 38, Minimum Clearances of Wires from Other Wires, Table 2; and Rule 39, Minimum Clearance of Wires from Signs, Table 2-A.

### 1.1.2 Summary of Activities

To remediate the identified clearance discrepancies and address reliability concerns, SCE proposes to rebuild some portions of three existing subtransmission lines, proposes to replace individual existing subtransmission poles along a portion of one of these subtransmission lines, and proposes to modify individual existing subtransmission structures along a portion of one of these subtransmission lines.

Where portions of the existing subtransmission lines are proposed to be rebuilt, existing subtransmission structures and the conductor carried by those structures would be removed, and new structures and conductor would be installed.[3] The portions of the existing subtransmission lines that are proposed to be rebuilt are generally characterized by a large number of discrepancies.

---

2 An individual instance of non-compliance with CPUC GO 95 is referred to as a discrepancy. Discrepancies are defined as potential clearance problems between an energized conductor and its surroundings, such as the structure, another energized conductor on the same structure, a different line, or the ground, among others.

3 Existing structures include lattice steel towers (LSTs), tubular steel poles (TSPs), lightweight steel (LWS) poles, wood poles, LWS H-frames, wood pole H-frames, and three-pole structures. Replacement structures include TSPs, LWS poles, and LWS or wood poles.

Where existing subtransmission poles are proposed to be replaced, ony the individual subtransmission poles would be replaced. The existing conductor would generally be transferred to the new pole. Additional subtransmission poles adjacent to the proposed replaced subtransmission poles may also be modified. The portion of an existing subtransmission line where individual subtransmission pole replacement is proposed is characterized by having a few number of discrepancies.

Where existing subtransmission structures are proposed to be modified, individual subtransmission structures (LSTs) would be modified. The structures would be modified to accommodate optical groundwire (OPGW). New conductor would be installed on the modified structures. The portion of an existing subtransmission line where structures would be modified is characterized by having no discrepancies.

Where distribution circuits are located on existing subtransmission structures that would be replaced, the distribution circuit would be transferred to the replacement structures. New OPGW and/or All-Dielectric Self-Supporting (ADSS) fiber optic cable would be installed for interstation communication to facilitate the protection of system components and infrastructure.

No new substations would be constructed under the GKR Project. Modifications within and adjacent to existing substations will be necessary to accommodate the installation of new conductor and systems protection equipment.

This work will be performed along the length of the existing 66 kV subtransmission lines included in the GKR Project. The locations where specific work would occur is detailed in the sections below and shown in Figure 3.1-1.

#### *1.1.2.1 Segment 1*

Segment 1 is located east of the cities of Arvin and Bakersfield. The majority of existing structures and all conductor would be removed and new structures and conductor would be installed along the length of Segment 1. Some existing structures would be modified and remain in-place. OPGW would be installed on the new structures. This work is detailed in Section 3.3.4.2 of this document.

#### *1.1.2.2 Segment 2*

Segment 2 is located in the southeast portion of the San Joaquin Valley. The existing structures and conductor would be removed, and new structures and conductor would be installed along the length of Segment 2. OPGW would be installed on the new structures. This work is detailed in Section 3.3.4.2 of this document.

#### *1.1.2.3 Segment 3*

Segment 3 is located in the Tehachapi Mountains. The existing structures and conductor would be removed and new structures and conductor would be installed along the length of Segment 3. OPGW would be installed on the new structures. This work is detailed in Section 3.3.4.2 of this document.

#### *1.1.2.4 Segment 4*

Segment 4 is located in the Tejon Hills. The existing structures and conductor would be removed and new structures and conductor would be installed along the length of Segment 4. OPGW would be installed on the new structures. This work is detailed in Section 3.3.4.2 of this document.

#### *1.1.2.5 Segment 5*

Segment 5 is located in the Cummings Valley. Some existing poles would be removed and replacement poles would be installed, and other structures would be modified. The existing conductor and cable attached to the existing poles would be transferred to the new poles. Third-party infrastructure may be transferred or left in-place on existing poles. Insulators and other hardware on adjoining poles may be modified to accommodate the taller new poles. ADSS fiber optic cable would be installed along the length of Segment 5. This work is detailed in Section 3.3.4.2 of this document.

#### *1.1.2.6 Existing Substations*

Under the GKR Project, work at existing substations would include removing and installing conductor, installing system protection equipment and cable, and modifying existing system protection equipment. This work is described in Sections 3.3.8 and 3.3.14 of this document.

## 1.2 Land Ownership and Right-of-Way Requirements

Existing and proposed land ownership and rights-of-way (ROWs) are addressed in detail in Section 3.4. The GKR Project would be constructed and operated on federal lands managed by the United States Forest Service (USFS) (Los Padres National Forest [LPNF] and Sequoia National Forest [SNF]), lands managed by the California Department of Parks and Recreation, lands managed by the California Department of Transportation (Caltrans; along state highways), county and cities (franchise), and private lands. SCE possesses sufficient rights over portions of these lands but will need to acquire additional land rights prior to the start of construction of the GKR Project.

## 1.3 Areas of Controversy

No areas of controversy or major issues related to the GKR Project have been communicated to SCE by representatives from Kern County, Los Angeles County, or others contacted by SCE as described in Section 2.2 of this document. SCE anticipates possible areas of controversy may include: the disruption of agricultural activities or agricultural lands; the closure of lanes on some public roads; the replacement of existing structures with modern equivalents; the potential to affect biological resources; compatibility and design considerations given other potential development in the region; and the overarching need for SCE to meet the objectives of the GKR Project.

## 1.4 Summary of Impacts

The analysis of environmental impacts is based upon the environmental setting applicable to each resource/issue and the manner in which the construction, operation, and maintenance of the GKR Project or alternatives would affect the environmental setting and related resource conditions. In accordance with California Environmental Quality Act (CEQA) requirements and guidelines, the impact assessment methodology also considers the following three topics: (1) the regulatory setting and evaluation of whether the proposed project or alternatives would be consistent with adopted federal, state, and local regulations and guidelines; (2) growth-inducing impacts; and (3) cumulative impacts. Regulatory compliance issues are discussed in each resource/issue area section.

This Proponent's Environmental Assessment (PEA) document is organized according to the following major issue area categories:

- Aesthetics
- Agriculture and forestry resources
- Air quality
- Biological resources
- Cultural resources
- Energy
- Geology and soils
- Land use and planning
- Mineral resources
- Noise
- Population and housing
- Public services
- Recreation
- Transportation

- Greenhouse gas (GHG) emissions
- Hazards and hazardous materials
- Hydrology and water quality
- Tribal cultural resources
- Utilities and service systems
- Wildfire

To provide for a comprehensive and systematic evaluation of potential environmental consequences to the resource/issue areas, the environmental impact assessments for the GKR Project and alternatives are based upon a classification system with the following four associated definitions:

- Class I: Significant impact; cannot be mitigated to a level that is not significant
- Class II: Significant impact; can be mitigated to a level that is less than significant
- Class III: Less than significant; no mitigation required
- Class IV: Beneficial impact
- No Impact (NI): No impact identified

SCE has proposed measures to reduce impacts to potentially affected resources or areas. These types of actions are referred to as applicant proposed measures (APMs). Further, SCE will implement CPUC-identified Draft Environmental Measures as necessary and as applicable. These measures are all considered in the impact assessment as part of the GKR Project's description.

### 1.4.1 Impact Summary Table for the GKR Project

Table ES-1 provides a summary of impacts, classification of impacts, APMs that may be applied, and residual impacts. As shown in Table ES-1, the GKR Project would not result in any impact that is significant and cannot be mitigated to a level that is less than significant (Class I). The impact analyses presented in Chapter 5 of this document indicate that, with implementation of APMs, the remainder of the potential environmental impacts associated with the GKR Project would be mitigated to a level that is less than significant (Class II) or would not be significant (Class III).

No potentially significant and unavoidable impacts have been identified for the GKR Project.

**Table ES-1. Summary of Impacts and Applicant Proposed Measures for the GKR Project**

| Impact | Impact Class | Applicant Proposed Measure(s) | Residual Impact |
|---|---|---|---|
| Impact AES-1: Have a substantial adverse effect on a scenic vista | NI | N/A | NI |
| Impact AES-2: Substantially damage scenic resources within a State Scenic Highway, including, but not limited to: trees, rock outcroppings, and historic buildings | NI | N/A | NI |
| Impact AES-3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (Public views are those that are experienced from publicly accessible vantage point) | III | N/A | III |
| Impact AES-4: Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area | III | N/A | III |
| Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, to nonagricultural use | NI | N/A | NI |

**Table ES-1. Summary of Impacts and Applicant Proposed Measures for the GKR Project**

| Impact | Impact Class | Applicant Proposed Measure(s) | Residual Impact |
|---|---|---|---|
| Impact AG-2: Conflict with existing zoning for agricultural use, or a Williamson Act contract | NI | N/A | NI |
| Impact AG-3: Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)) | NI | N/A | NI |
| Impact AG-4: Result in the loss of forest land or conversion of forest land to non-forest use | NI | N/A | NI |
| Impact AG-5: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use | NI | N/A | NI |
| Impact AIR-1: Conflict with or obstruct implementation of the applicable air quality plan | NI | N/A | NI |
| Impact AIR-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard | II | AIR-1 | III |
| Impact AIR-3: Expose sensitive receptors to substantial pollutant concentrations | III | N/A | III |
| Impact AIR-4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people | III | N/A | III |
| Impact BIO-1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status in local or regional plans, policies, or regulations, or by the CDFW or USFWS | II | WEAP, GEN-1, BOT-1, BOT-2, RES-1, RES-2, HERP-5, HERP-7, AVI-1, AVI-2, AVI-3, MAM-2, MAM-3, MAM-6, WET-1 | III |
| Impact BIO-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS | II | WEAP, GEN-1, BOT-1, BOT-2, RES-1, RES-2, WET-1 | III |
| Impact BIO-3: Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means | II | WET-1 | III |
| Impact BIO-4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridor, or impede the use of native wildlife nursery sites | III | N/A | III |
| Impact BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance | III | N/A | III |
| Impact BIO-6: Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan. | III | N/A | III |

**Table ES-1. Summary of Impacts and Applicant Proposed Measures for the GKR Project**

| Impact | Impact Class | Applicant Proposed Measure(s) | Residual Impact |
|---|---|---|---|
| Impact BIO-7: Would the project create a substantial collision or electrocution risk for birds or bats? | III | N/A | III |
| Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource as defined in Section 15065.5 | III | N/A | III |
| Impact CUL-2: Cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15065.5; and/or | II | CUL-1, CUL-2, CUL-3, CUL-4 | III |
| Impact CUL-3: Disturb any human remains, including those interred outside of formal cemeteries | II | CUL-1, CUL-2, CUL-3, CUL-4, CUL-5, WEAP | III |
| Impact EN-1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation | III | N/A | III |
| Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency | NI | N/A | NI |
| Impact EN-3: Add capacity for the purpose of serving a nonrenewable energy resource | NI | N/A | NI |
| Impact GEO-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, or injury, or death involving: rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (Refer to Division of Mines and Geology Special Publication 42.); strong seismic ground shaking; seismic-related ground failure, including liquefaction; and landslides | III | N/A | III |
| Impact GEO-2: Result in substantial soil erosion or the loss of topsoil | III | N/A | III |
| Impact GEO-3: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse | III | N/A | III |
| Impact GEO-4: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property | III | N/A | III |
| Impact GEO-5: Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water | NI | N/A | NI |
| Impact GEO-6: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature | II | PAL-1, PAL-2, PAL-3 | III |
| Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment | III | N/A | III |
| Impact GHG-2: Conflict with an applicable plan, policy, or | NI | N/A | NI |

**Table ES-1. Summary of Impacts and Applicant Proposed Measures for the GKR Project**

| Impact | Impact Class | Applicant Proposed Measure(s) | Residual Impact |
|---|---|---|---|
| regulation adopted for the purpose of reducing GHG emissions | | | |
| Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials | II | HAZ-1 | III |
| Impact HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment | III | WEAP, HAZ-1 | III |
| Impact HAZ-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school | III | N/A | III |
| Impact HAZ-4: Be located on a site that is included on a list of hazardous material sites, compiled pursuant to Government Code Section 65962.5, and as a result would create a significant hazard to the public or the environment | NI | N/A | NI |
| Impact HAZ-5: For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, the project would result in a safety hazard or excessive noise for people residing or working in the project area | NI | N/A | NI |
| Impact HAZ-6: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan | III | TRA-1 | III |
| Impact HAZ-7: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires | III | HAZ-3 | III |
| Impact HAZ-8: Create a significant hazard to air traffic from the installation of new power lines and structure | NI | TRA-2 | NI |
| Impact HAZ-9: Create a significant hazard to the public or environment through the transport of heavy materials using helicopters | NI | N/A | NI |
| Impact HAZ-10: Expose people to a significant risk of injury or death involving unexploded ordnance | NI | N/A | NI |
| Impact HAZ-11: Expose workers or the public to excessive shock hazards | NI | N/A | NI |
| Impact HYDR-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality | III | HAZ-1, WET-1 | III |
| Impact HYDR-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin | III | N/A | III |
| Impact HYDR-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: Result in | III | WET-1 | III |

**Table ES-1. Summary of Impacts and Applicant Proposed Measures for the GKR Project**

| Impact | Impact Class | Applicant Proposed Measure(s) | Residual Impact |
|---|---|---|---|
| substantial erosion or siltation on site or off site; Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; Impede or redirect flood flows | | | |
| Impact HYDR-4: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation | III | N/A | III |
| Impact HYDR-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan | NI | N/A | NI |
| Impact LU-1: Physically divide an established community | NI | N/A | NI |
| Impact LU-2: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect | NI | N/A | NI |
| Impact MIN-1: Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state | NI | N/A | NI |
| Impact MIN-2: Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan | NI | N/A | NI |
| Impact NOI-1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies | II | NOI-1 and other measure(s) | III |
| Impact NOI-2: Generation of excessive groundborne vibration or groundborne noise levels | NI | N/A | NI |
| Impact NOI-3: Exposure of people residing or working in the Project area to excessive noise levels for a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport | NI | N/A | NI |
| Impact POP-1: Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | NI | N/A | NI |
| Impact POP-2: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? | NI | N/A | NI |
| Impact PUB-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain | NI | TRA-1 | NI |

**Table ES-1. Summary of Impacts and Applicant Proposed Measures for the GKR Project**

| Impact | Impact Class | Applicant Proposed Measure(s) | Residual Impact |
|---|---|---|---|
| acceptable service ratios, response times or other performance objectives for any of the public services: Fire protection; Police protection; Schools; Parks; Other public facilities? | | | |
| Impact REC-1: Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated | NI | N/A | NI |
| Impact REC-2: Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment | NI | N/A | NI |
| Impact REC-3: Reduce or prevent access to a designated recreation facility or area | III | N/A | III |
| Impact REC-4: Substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas | III | N/A | III |
| Impact REC-5: Damage recreational trails or facilities | NI | N/A | NI |
| Impact TRA-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities | III | TRA-1 | III |
| Impact TRA-2: Conflict or be inconsistent with CEQA Guidelines Section 15064.3(b) (vehicle miles traveled) | NI | N/A | NI |
| Impact TRA-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) | NI | N/A | NI |
| Impact TRA-4: Result in inadequate emergency access. | III | TRA-1 | III |
| Impact TRA-5: Create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations | III | TRA-1, TRA-3 | III |
| Impact TRA-6: Interfere with walking or bicycling accessibility | III | TRA-1, TRA-3 | III |
| Impact TRA-7: Substantially delay public transit | III | N/A | NI |
| Impact TCR-1: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the | ND | TCR-1, TCR-2 | ND |

**Table ES-1. Summary of Impacts and Applicant Proposed Measures for the GKR Project**

| Impact | Impact Class | Applicant Proposed Measure(s) | Residual Impact |
|---|---|---|---|
| lead agency shall consider the significance of the resource to a California Native American tribe. | | | |
| Impact UTIL-1: Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects | NI | N/A | NI |
| Impact UTIL-2: Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years | NI | N/A | NI |
| Impact UTIL-3: Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments | NI | N/A | NI |
| Impact UTIL-4: Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals | NI | N/A | NI |
| Impact UTIL-5: Comply with federal, state, and local management and reduction statutes and regulations related to solid waste | NI | N/A | NI |
| Impact UTIL-6: Increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts | NI | N/A | NI |
| Impact WF-1: Substantially impair an adopted emergency response/evacuation plan. | III | TRA-1 | III |
| Impact WF-2: Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire | NI | N/A | NI |
| Impact WF-3: Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment | NI | N/A | NI |
| Impact WF-4: Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes | III | N/A | III |

Notes:
N/A = Not Applicable
ND = Not Determined
NI = No Impact
UNK = Unknown; analysis has not been completed at this time The full text of APMs is presented in Table 3.11-1 of this document.

## 1.5 Summary of Alternatives

Alternatives to the GKR Project are identified in accordance with the CEQA Guidelines. Section 15126.6(a) of the Guidelines states:

> An EIR shall describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project.

Section 15364 of the Guidelines defines "feasible" as:

> …capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

SCE has identified three feasible Alternatives to the GKR Project or portions of the project; these are summarized below and in greater detail in Section 4.1. SCE has also identified a No Project Alternative; this is discussed in Section 4.2. SCE also identified and analyzed the feasibility of a few other Alternatives to the project that were found to be infeasible and subsequently dismissed. These Alternatives, and the criteria and rationale behind the findings of infeasibility for each, are presented in Section 4.1.

### 1.5.1 Alternative A

Alternative A would remediate discrepancies associated with the GKR Project through a combination of rebuilding existing infrastructure, removing entirely (and not replacing) some infrastructure, and constructing wholly new subtransmission line infrastructure to maintain reliable service to the substations included under the GKR Project. Alternative A would be identical to the GKR Project in some portions of the GKR Project alignment; would remove entirely the infrastructure in another portion; and would construct two new subtransmission circuits (from the existing Bailey Substation to the existing Gorman Substation and from the existing Banducci Substation to a newly-constructed ring-bus adjacent to the existing Highwind Substation).[4]

### 1.5.2 Alternative B

Alternative B would remediate discrepancies associated with the GKR Project through a combination of rebuilding existing infrastructure, removing entirely and not replacing some infrastructure, and constructing wholly new subtransmission line infrastructure and generation infrastructure to maintain reliable service to the substations included under the GKR Project. Alternative B would be identical to the GKR Project in some portions of the GKR Project alignment; would remove entirely the infrastructure in one portion; would construct a new overhead subtransmission line between the existing Kern River 1 Hydroelectric Substation and the existing Magunden Substation; and would install non-hydropower generation capacity at the existing Kern River 1 Hydroelectric Substation.

### 1.5.3 Alternative C

Alternative C would remediate discrepancies associated with the GKR Project through a combination of rebuilding existing infrastructure, removing entirely and not replacing some infrastructure, and constructing wholly new subtransmission line infrastructure and generation infrastructure to maintain reliable service to the substations included under the GKR Project. Alternative C would be identical to the GKR Project in some portions of the GKR Project alignment; would remove entirely the infrastructure in another portion; would construct a new subtransmission line with both overhead and underground components between the

---

4 A ring-bus contains four breakers arranged in a circle with circuits emanating from each. A ring-bus does not have the capability of transforming voltage and adds flexibility to the electrical system.

existing Kern River 1 Hydroelectric Substation and the existing Magunden Substation; and would install non-hydropower generation capacity at the existing Kern River 1 Hydroelectric Substation.

## 1.6 Pre-filing Consultation and Public Outreach Summary

SCE has periodically engaged in pre-filing consultation and public outreach activities related to the GKR Project since early 2018. To date, SCE has briefed public land managers (USFS), local jurisdictions crossed by or near the GKR Project alignment (Kern County, Los Angeles County, and cities of Arvin and Bakersfield) and the CPUC. Further, a mailer was sent to local residents and local government officials in June 2021.

Details regarding this pre-filing consultation with agencies and other public outreach efforts are presented in Section 2.2.1. Pre-filing consultation and public outreach did not result in the generation of any significant outcomes, and thus none were incorporated into the GKR Project.

## 1.7 Conclusions

The primary conclusions resulting from the environmental impact analyses presented in Chapter 5 and Chapter 6 of this document are as follows:

- The GKR Project, as described in Chapter 3, and the three feasible Alternatives identified above and detailed in Chapter 4, all meet the objectives identified for the GKR Project.
- The GKR Project, as described in Chapter 3, presents no potentially significant environmental impacts that cannot be mitigated to a level that is not significant.
- The GKR Project, as described in Chapter 3, presents fewer impacts and impacts of a lower magnitude than presented by any of the feasible Alternatives.

## 1.8 Remaining Issues

Except as described above, no major environmental, engineering, or real properties-related issues remain to be resolved.

# 2 Introduction

This Chapter introduces the GKR Project and identifies its purpose and need and its objectives. This information is required by the CPUC's PEA Guidelines (*Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments*, dated November 2019) and the CEQA (Pub. Resources Code § 21000 *et seq.*) and its implementing Guidelines (14 Cal. Code Regs. § 15000 *et seq*). Additional information regarding the GKR Project's purpose and need is provided in SCE's application to the CPUC in accordance with GO 131-D.

This section also provides a roadmap to the organization of this PEA document.

## 2.1 Project Background

SCE is a public utility that provides electric service to a population of approximately 15 million people within a 50,000-square-mile service area that encompasses 180 cities throughout Southern California. SCE owns and operates approximately 5,000 miles of bulk power facilities (500 kV and 220 kV transmission lines) and 1,500 miles of subtransmission (55 kV to 115 kV) lines. SCE also owns and operates 1,200 miles of radial 115 kV subtransmission lines.

The design of electric lines in California is governed by GO 95, Rules For Overhead Electric Line Construction. The purpose of the Rules contained within GO 95 is to formulate, for the State of California, requirements for overhead line design, construction, and maintenance, the application of which would ensure adequate service and secure safety to persons engaged in the construction, maintenance, operation or use of overhead lines and to the public in general.

GO 95 Rules 37 through 39 specify minimum vertical and horizontal clearances that must be maintained between an electric power line (referred to as a conductor) and other conductors, or between a conductor and the ground, buildings, and a variety of other objects. Conductor clearance in the field (e.g., between a conductor and the ground) is not a static value—it changes depending upon the operational characteristics of the line. As greater amounts of electricity are transmitted by a conductor, the conductor material heats up and expands, resulting in greater sag (and a lesser clearance) in a given span.

In 2006, SCE identified that the clearances along some of its circuits were not compliant with the clearances required by GO 95 due to the installation of additional infrastructure under SCE lines over time; survey, engineering, and construction inaccuracies; the growth of vegetation; and changes in topography. This information was communicated to both the CPUC and the California Independent System Operator (CAISO). SCE then initiated a Light Detection and Ranging (LiDAR) study and engineering modeling work to confirm these discrepancies.[5,6]

The collective effort to identify and remediate these discrepancies across SCE's system is referred to as the Transmission Line Rating Remediation (TLRR) effort. Based on the LiDAR and engineering

5 An individual instance of non-compliance with GO 95 is referred to as a discrepancy. Discrepancies are defined as potential clearance problems between an energized conductor and its surroundings, such as the structure, another energized conductor on the same structure, a different line, or the ground, among others.

6 Light Detection and Ranging (LiDAR) technology uses ultraviolet or near infrared light to image objects and map physical features. SCE uses aircraft equipped with LiDAR equipment to identify locations throughout SCE's service territory that do not meet the minimum required clearances for overhead lines established in GO 95.

modeling work, SCE's TLRR effort is developing a remediation plan for each discrepancy to ensure compliance with GO 95 standards.

The GKR Project is one of several projects within SCE's larger TLRR effort. The discrepancies identified on the subtransmission lines included under the GKR Project were identified through LiDAR and engineering modeling work performed under the TLRR effort.

### 2.1.1 Purpose and Need

#### *2.1.1.1 Project Need*

The GKR Project is needed to:

(1) Comply with GO 95 by remediating identified discrepancies through SCE's TLRR effort along the following 66 kV circuits:

- Banducci-Kern River 1
- Frazier Park-Gorman
- Gorman-Kern River 1

(2) Address reliability concerns related to the condition of existing infrastructure on the affected subtransmission lines

#### *2.1.1.2 Localities Served*

The subtransmission lines included in the GKR Project would continue to serve the localities that they currently serve; there would be no change to either the local or regional utility system as a result of the GKR Project.

#### *2.1.1.3 California Independent System Operator Consideration*

The GKR Project was not identified by the CAISO because the remediation of discrepancies does not fall under its purview. The need for the GKR Project was identified by SCE.

### 2.1.2 Project Objectives

#### *2.1.2.1 Basic Project Objectives*

The GKR Project is being proposed to meet the following objectives: Comply with standards contained in GO 95 and to address reliability concerns related to the condition of existing infrastructure on the affected subtransmission lines.

The purpose of the Rules contained within GO 95 is to formulate, for the State of California, requirements for overhead line design, construction, and maintenance, the application of which will ensure adequate service and secure safety to persons engaged in the construction, maintenance, operation or use of overhead lines and to the public in general.

The objective of the GKR Project is to remediate identified discrepancies in order to ensure compliance with the standards contained in GO 95 Rule 37, Minimum Clearances of Wires above Railroads, Thoroughfares, Buildings, Etc., Table 1; Rule 38, Minimum Clearances of Wires from Other Wires, Table 2; and Rule 39, Minimum Clearance of Wires from Signs, Table 2-A.[7]

#### *2.1.2.2 How Project Implementation Will Achieve the Basic Project Objectives*

Implementation of the GKR Project will achieve the basic project objectives by remediating existing discrepancies through the replacement and/or modification of existing subtransmission structures and conductor with new structures and conductor that will be engineered and constructed to meet the standards contained in GO 95. These new and/or modified structures will address the reliability concerns related to the condition of existing infrastructure on the affected subtransmission lines by replacing the existing infrastructure.

#### *2.1.2.3 Why Attainment of the Basic Project Objectives is Necessary*

Attainment of the basic project objective is necessary because SCE is required to comply with standards contained in GO 95, and to maintain the reliability of the SCE system.

### 2.1.3 Project Applicant

SCE is the project Applicant. SCE owns each component of the GKR Project. SCE is a public utility that provides electric service to a population of approximately 15 million people within a 50,000-square-mile service area that encompasses 180 cities throughout Southern California.

## 2.2 Pre-filing Consultation and Public Outreach

### 2.2.1 Pre-filing Consultation and Public Outreach

#### *2.2.1.1 Description of Pre-filing Consultation and Public Outreach*

The sections below describe all pre-filing consultation and public outreach that has occurred to date.

##### 2.2.1.1.1 California Independent System Operator

SCE has not discussed the purpose or need for the GKR Project with CAISO.

##### 2.2.1.1.2 Public Agencies with Jurisdiction over Project Areas or Resources that May Occur in the GKR Project Area

SCE plans to provide periodic updates to local jurisdictions at key milestones throughout the life of the GKR Project, such as prior to filing an application for a Permit to Construct (PTC), immediately after a final decision, and prior to the start of construction (assuming the GKR Project is approved).

##### 2.2.1.1.3 United States Forest Service

SCE has met with representatives of the LPNF regarding the GKR Project on a regular basis since June 2017, and with representatives of SNF regarding the project on a regular basis since June 2017.

##### 2.2.1.1.4 California Public Utilities Commission

Beginning in April 2016, SCE provided the CPUC with quarterly presentations that included a high-level description of the TLRR effort and proposed projects that were expected to be licensed under GO 131-D; included in these presentations was information regarding the GKR Project.

---

7 Where a GO 95-specified clearance is exceeded by an SCE clearance standard, the more-conservative SCE clearance standard is used in the design.

In February 2018, SCE provided an in-depth presentation of the components of the GKR Project during a meeting with the CPUC in which GO 131-D and CEQA scheduling were discussed.

Following the February 2018 meeting, SCE began holding monthly meetings with the CPUC to discuss coordination of the CEQA review processes. In addition to these monthly meetings, SCE also met with CPUC staff as follows:

- In August 2018, SCE met with staff from the CPUC to discuss a range of topics including project scope and schedule, licensing approaches, and other topics.
- In August 2019, SCE met with the CPUC to provide an update on project descriptions and timelines of the TLRR licensing projects, including the GKR Project.
- SCE provided an updated description of the GKR Project to the CPUC in October 2019.

#### 2.2.1.1.5 Kern County

SCE Local Public Affairs staff provided annual briefings in 2017, 2018, and 2019 to the Kern County Planning Director on the TLRR effort, including components of the GKR Project.

#### 2.2.1.1.6 Los Angeles County

SCE communicated with Los Angeles County regarding the TLRR effort in 2021.

#### 2.2.1.1.7 City of Arvin

SCE communicated with the City of Arvin regarding the GKR Project in 2021.

#### 2.2.1.1.8 City of Bakersfield

SCE Local Public Affairs staff communicated with City of Bakersfield staff in 2019 regarding the TLRR effort, including components of the GKR Project.

#### 2.2.1.1.9 Native American Tribes Affiliated with the GKR Project Area

SCE has not communicated with Native American tribes affiliated with the GKR Project area. Such communication and consultation is performed on a government-to-government basis.

#### 2.2.1.1.10 Private Landowners and Homeowner Associations

SCE sent a mailer to local landowners in June 2021. This mailer included a summary of the GKR Project, a figure illustrating the GKR Project alignment, and a summary of potential project activities. A copy of this mailer is provided in Appendix G to this PEA and is available on SCE's Project website at https://www.sce.com/about-us/reliability/upgrading-transmission/kernriver.

#### 2.2.1.1.11 Developers for Large Housing or Commercial Projects Near the GKR Project Area

SCE is aware of the proposed large housing and commercial project planned for portions of the Tejon Ranch. SCE reached out to the Tejon Ranch Company in 2018, 2019, and 2021 to solicit input and provide information/updates about the GKR Project.

#### 2.2.1.1.12 Other Utility Owners and Operators

SCE has not communicated with other utility owners or operators.

#### 2.2.1.1.13 Federal, State, and Local Fire Management Agencies

SCE has not communicated with federal, state, or local fire management agencies regarding the GKR Project.

#### *2.2.1.2 Significant Outcomes*

No significant outcomes of consultation were incorporated into the GKR Project. No areas of controversy or major issues related to the GKR Project have been communicated to SCE by representatives from Kern County or the City of Bakersfield.

#### *2.2.1.3 Development that Could Coincide or Conflict With Project Activities*

SCE is not aware of any developments that could conflict with GKR Project activities (i.e., developments within or immediately adjacent to the existing subtransmission line alignments). SCE is aware of developments that could coincide, either spatially or temporally, with the GKR Project; these are addressed in Chapter 7.

### 2.2.2 Records of Consultation and Public Outreach

A summary of consultation is provided in Appendix G.

## 2.3 Environmental Review Process

### 2.3.1 Environmental Review Process

The GKR Project will be subject to environmental review under CEQA.

### 2.3.2 California Environmental Quality Act Review

#### *2.3.2.1 CPUC as CEQA Lead Agency*

Pursuant to GO 131-D, SCE is applying to the CPUC for a PTC authorizing SCE to construct the GKR Project. Further pursuant to GO 131-D, in order to issue a PTC, the CPUC will evaluate the project in accordance with CEQA. The CPUC will be the Lead agency under CEQA for the GKR Project.

#### *2.3.2.2 Other State and Federal Agencies that May Have Discretionary Permitting Authority*

The USFS; the United States (U.S.) Army Corps of Engineers (USACE); the U.S. Fish and Wildlife Service (USFWS); Caltrans; the California Department of Fish and Wildlife (CDFW); the Lahontan Regional Water Quality Control Boards (RWQCB), Los Angeles RWQCB, and Central Valley RWQCB may have discretionary permitting authority over aspects of the GKR Project.

#### *2.3.2.3 Federal, State, and Local Agencies that May Have Ministerial Permitting Authority*

Caltrans, Kern County, Los Angeles County, Los Angeles Department of Water and Power (LADWP), and the cities of Arvin and Bakersfield may have ministerial permitting authority over aspects of the GKR Project.

#### *2.3.2.4 Results of Preliminary Outreach with Agencies*

SCE has not been made aware of any unexpected issues that would affect the CEQA process as a result of the outreach described above in Section 2.2.1.

### 2.3.3 National Environmental Policy Act Review

Those portions of the GKR Project located on federal lands, those elements of the GKR Project that may result in impacts to federally-jurisdictional waters or wetlands, and those elements that may result in impacts to federally-listed threatened or endangered species will be subject to review under the National Environmental Policy Act (NEPA). In 2018, SCE was issued a Master Special Use Permit (MSUP) from the USFS that consolidated existing transmission and distribution easements into a single easement for each forest. The MSUP is accompanied by the Operations and Maintenance Plan (O&M Plan), that described how SCE will plan and implement work activities under the permit. SCE underwent NEPA analysis with the USFS to cover minimal impact and routine maintenance activities under the MSUP, which were identified as Class I and Class II activities.[8] For project proposals that may have a larger impact, such as new alignments, or that may have impacts that were not previously analyzed, such projects would be considered Class III activities, and would require additional NEPA analysis and associated permitting.

For the structures that are currently located on SNF and LPNF lands, based on the anticipated scope within these forests, SCE anticipates using the MSUP to obtain approval. SCE believes that the proposed activities in Segment 1 within the SNF and in Segment 2 within the LPNF would be considered Class II activities covered by the MSUP. Therefore, no additional NEPA analysis by the USFS is expected. In the event that either SNF or LPNF determines that the subject work is not covered by the existing MSUP as a Class II activity and that potential impacts require additional analysis, then one or both of the National Forest(s) could perform additional NEPA analysis as a Class III activity under the MSUP.

### 2.3.4 Pre-filing California Environmental Quality Act and National Environmental Policy Act Coordination

Pre-filing coordination with CEQA and NEPA review agencies has been limited. The coordination to-date has identified that separate CEQA and NEPA processes will be engaged for the GKR Project.

SCE has been in communication with the SNF and LPNF (see Section 2.2.1.1.3). As stated above, SCE anticipates using the MSUP to obtain approval from the SNF and LPNF to complete work on the structures within their lands.

## 2.4 Document Organization

### 2.4.1 PEA Organization

The GKR Project PEA document contains the following Sections, as set forth in the CPUC's *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments*, dated November 2019, Revision 1.0.

#### *2.4.1.1 Section 1, Executive Summary*

This section includes a summary of the GKR Project, a discussion of the land ownership and ROW requirements, a presentation of the areas of controversy identified to date, a summary of potential impacts, a summary of alternatives to the GKR Project, a summary of the pre-filing consultation and public outreach performed to date, a summary of the major PEA conclusions, and a listing of remaining major issues that remain to be resolved.

#### *2.4.1.2 Section 2, Introduction*

This section includes a presentation of the purpose and need for, and objectives of, the GKR Project; identifies the Applicant; details the pre-filing consultation and public outreach activities conducted to date; outlines the environmental review process; and describes the organization of the PEA document.

---

[8] Class I activities are routine activities with minimal to no ground disturbance and environmental impact. These activities are considered *de minimis* – lacking significance – and are minor; they do not warrant in-depth analysis. Class II are considered routine activities, and include maintenance work within our existing easements, like tower replacement and conductor replacement.

#### *2.4.1.3 Section 3, GKR Project Description*

This section includes an overview of the GKR Project; a description of the existing and proposed system; a presentation of the components of the GKR Project; information related to land ownership, ROWs, and easements; a description of the construction methodologies to be employed; data regarding the construction workforce, equipment, traffic, and schedule; information on post-construction activities; a discussion of operation and maintenance-related work; decommissioning-related information; a listing of anticipated permits and approvals; and a table presenting APMs.

#### *2.4.1.4 Section 4, Description of Alternatives*

This section identifies and describes Alternatives to the GKR Project, includes a discussion of a No Project Alternative, and lists Alternatives identified and considered but rejected.

#### *2.4.1.5 Section 5, Environmental Analysis*

This section includes a description of the environmental setting, regulatory setting, and impact analysis for each resource area. The resource areas addressed include each environmental factor (resource area) identified in the most recent adopted version of the CEQA Guidelines Appendix G checklist and any additional relevant resource areas and impact questions that are defined in the CPUC's PEA checklist.

#### *2.4.1.6 Section 6, Comparison of Alternatives*

This section compares each Alternative described in Section 4 against the GKR Project in terms of each Alternative's ability to avoid or reduce a potentially significant impact. This section also provides a detailed table that summarizes the Applicant's comparison results and ranks the alternatives in order of environmental superiority.

#### *2.4.1.7 Section 7, Cumulative Impacts and Other CEQA Considerations*

This section provides a detailed table listing of past, present, and reasonably foreseeable future projects within and surrounding the GKR Project (within an approximately 2-mile buffer); presents a cumulative impact analysis; and provides an evaluation of potential growth-inducing impacts.

#### *2.4.1.8 Section 8, List of Preparers*

This Section lists the major authors and preparers of the PEA document.

#### *2.4.1.9 Section 9, References*

This Section includes a list of references cited in this PEA.

#### *2.4.1.10 Required PEA Appendices and Supporting Materials*

SCE has provided those appendices and supporting materials identified as 'Required' in the CPUC's *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments*; these appendices are presented in this PEA in the same order as presented in the Guidelines. Appendices I through N to this PEA contain supporting materials as referenced in this PEA document; these Appendices are not identified in the *Guidelines*. The 'Potentially Required Appendices and Supporting Materials' listed in the *Guidelines* are not provided as these are either unnecessary to support the environmental impact analyses or conclusions presented in this PEA document, or the preparation of such documents is premature.

Page intentionally left blank.

# 3 GKR Project Description

This Chapter provides a detailed description of SCE's GKR Project.

## 3.1 Project Overview

### 3.1.1 Summary of the GKR Project

The GKR Project is proposed to remediate discrepancies associated with existing subtransmission lines.[9] To remediate these discrepancies, SCE proposes to (1) rebuild a substantial portion of the existing subtransmission lines, and to (2) replace/modify individual existing poles and reuse individual existing subtransmission structures along portions of existing subtransmission lines. The locations where these differing discrepancy remediation approaches would be applied are presented in Figure 3.1-1 and are described in further detail in Section 3.3 below.

No new substations are proposed to be constructed under the GKR Project, and no existing substations would be expanded or upgraded. Work at existing substations under the GKR Project would be limited in scope and performed within or adjacent to the existing substation facilities.

### 3.1.2 Geographical Location of the GKR Project

The GKR Project would be located in unincorporated Kern County, unincorporated Los Angeles County, and the cities of Arvin and Bakersfield within the State of California.

### 3.1.3 Overview Map

An overview map of the GKR Project location is presented in Figure 3.1-1.

## 3.2 Existing and Proposed System

### 3.2.1 Existing System

#### *3.2.1.1 Existing Utility System*

The GKR Project utility system is defined as three existing subtransmission lines where discrepancies have been identified, and the connected substations. The GKR Project's existing utility system comprises the following:

- Subtransmission Lines
  - Banducci-Kern River 1 66 kV Subtransmission Line
  - Frazier Park-Gorman 66 kV Subtransmission Line
  - Gorman-Kern River 1 66 kV Subtransmission Line
- Substations
  - Banducci 66 kV Substation
  - Frazier Park 66 kV Substation
  - Gorman 66 kV Substation
  - Kern River 1 Hydroelectric 66 kV Substation

---

9 Discrepancies are defined as potential clearance problems between an energized conductor and its surroundings, such as the structure, another energized conductor on the same structure, a different line, or the ground, among others.

#### 3.2.1.2 Users and Area Served by the Existing Utility System

The existing infrastructure provides power to communities served from the existing Kern River 1 Hydroelectric Substation. The infrastructure also serves areas that include the City of Tehachapi and surrounding communities. These communities are primarily served from Banducci, Correction, and Cummings substations. In addition to the communities regularly served in the greater Tehachapi area, the infrastructure also has the ability to provide power to communities directly served from the existing Gorman and Frazier Park substations, as needed.

#### 3.2.1.3 GKR Project and the Existing Local and Regional Systems

The GKR Project represents only the replacement of existing infrastructure with new infrastructure, and therefore the infrastructure is part of the existing system and will continue to be part of the existing system.

#### 3.2.1.4 Schematic Diagram of the Existing System Features

Figure 3.2-1a provides a schematic diagram of the existing GKR Project-related system.

#### 3.2.1.5 Maps and Associated Geographic Information System (GIS) Data

Maps for existing facilities that would be modified by the GKR Project are presented in Appendix A. GIS data are provided under separate electronic cover.

### 3.2.2 GKR Project System

#### 3.2.2.1 GKR Project by Component

A description of the whole of the GKR Project by component is provided below in Section 3.3. The GKR Project would install new subtransmission structures and new conductor to replace existing structures and conductor. Certain existing structures would be modified. Except as discussed in this Chapter 3, no other upgrades or expansions to existing structures or facilities are included under the GKR Project, and there are no other interrelated activities that are part of the whole of the action.

#### 3.2.2.2 System Features

System features that would be added, modified, or disconnected as part of the GKR Project are described in detail in Section 3.3.

#### 3.2.2.3 Expected Capacities of the Proposed Facilities

The GKR Project is designed to remediate discrepancies and improve reliability, not to increase or change the capacity of SCE's electrical system.

Compared to the capacity offered by the existing conductor, the replacement conductor that would be installed would have a higher capacity. However, the practical use of that higher capacity will be limited by existing substation equipment, which will not be changed under the GKR Project. Therefore, because substation equipment would not be replaced or upgraded under the GKR Project, the system-level capacity would not be changed.

#### 3.2.2.4 Initial and Full Buildout of the Proposed Facilities

The GKR Project, as proposed, represents the full buildout of the GKR Project facilities; the project build out would not occur in separate stages.

#### *3.2.2.5 System Tie or Loop for Reliability*

The GKR Project will not create a second system tie or loop for sustainable reliability.

#### *3.2.2.6 Users and Area Served by the Proposed Utility System*

The GKR Project would not provide service to any new users or areas; the existing users and areas served by the existing system (see Section 3.2.1.2 above) would continue to be served by the replacement infrastructure.

#### *3.2.2.7 Schematic Diagram of the Proposed System Features*

Figure 3.2-1b provides a schematic diagram of the post-construction GKR Project-related system.

#### *3.2.2.8 Detailed Maps and Associated GIS Data*

Maps for existing facilities that would be installed and modified by the GKR Project are presented in Appendix A. GIS data are provided under separate electronic cover.

### 3.2.3 System Reliability

The GKR Project will not create a second system tie or loop for reliability. The existing subtransmission lines and substations included under the GKR Project currently are part of the existing utility system. Because the GKR Project will only replace portions of the existing utility system, the infrastructure included under the GKR Project will continue to relate to and support the existing utility system.

### 3.2.4 Planning Area

No system planning area (e.g., Electrical Needs Area or Distribution Planning Area) has been defined for the GKR Project. SCE defines a system planning area when considering projects intended to address load growth in the SCE system. As the GKR Project is proposed to remediate clearance discrepancies and reliability concerns, and is not proposed to address load growth, no system planning area has been defined or is relevant.

## 3.3 Project Components

The discussions below address the components of the GKR Project.

### 3.3.1 Preliminary Design and Engineering

#### *3.3.1.1 Preliminary Design and Engineering*

Preliminary design and engineering information for facilities proposed under the GKR Project are presented in subsequent sections: the approximate locations of replacement structures to be installed and existing structures to be removed are presented in Appendix A; the dimensions of these structures are presented in Section 3.4; and the limits of areas that would be needed to construct the facilities included under the GKR Project are presented graphically in Appendix A and described in Section 3.5.

#### *3.3.1.2 Preliminary Design Drawings*

Appendix A provides preliminary design drawings for the replacement structures included as part of the GKR Project; these drawings approximate a 60 percent-complete design. The project description is based on planning level assumptions. Actual work scope would be determined following completion of final engineering, further identification of field conditions, and compliance with applicable environmental and permitting requirements.

### *3.3.1.3 Project Maps*

Appendix A contains detailed project maps that display all facility locations and boundaries with attributes and spatial geometry that corresponds to information in the Project Description.

## 3.3.2 Segments, Components, and Phases

### *3.3.2.1 Project Segments*

The GKR Project is divided into the following five segments:

- Segment 1 spans approximately 20.4 miles from the existing Kern River 1 Hydroelectric Substation to and including Structure M20-T3 (a location referred to as "the T"). The existing structures in Segment 1 support portions of the Gorman-Kern River 1 and Banducci-Kern River 1 66 kV subtransmission lines.
- Segment 2 spans approximately 26.5 miles from Structure M20-T3 to and including Structure M46-T6. The existing structures in Segment 2 support portions of the Gorman-Kern River 1 66 kV Subtransmission Line.
- Segment 3 spans approximately 4.1 miles from Structure M46-T6 to the existing Gorman Substation. The existing structures in Segment 3 support portions of the Gorman-Kern River 1 and Frazier Park-Gorman 66 kV subtransmission lines.
- Segment 4 spans approximately 11.3 miles from Structure M20-T3 to and including Structure M11-T3. The existing structures in Segment 4 support portions of the Banducci-Kern River 1 66 kV Subtransmission Line.
- Segment 5 spans approximately 3 miles from Pole X7666E to the existing Banducci Substation. The existing structures in Segment 5 support portions of the Banducci-Kern River 1 66 kV Subtransmission Line, distribution circuitry, and telecommunications infrastructure.

### *3.3.2.2 Components*

The GKR Project includes the components described in greater detail in subsequent sections.

#### 3.3.2.2.1 Subtransmission

The GKR Project would rebuild or replace infrastructure along 65.3 miles of existing 66 kV subtransmission lines by:

- Removing existing subtransmission structures (to include LSTs, TSPs, wood pole H-frames, wood poles, LWS H-frames, and three-pole structures) and replacing them with new subtransmission structures (to include TSPs, TSP H-frames, LWS poles, and LWS H-frames).
- Modifying existing LSTs in Segment 1
- Removing existing conductor and installing new Aluminum Conductor Composite Core (ACCC) and/or Aluminum Conductor Steel Reinforced (ACSR) subtransmission conductor on replacement structures.
- Installing OPGW, ADSS fiber optic cable, and OHGW for system protection, including underground facilities.

#### 3.3.2.2.2 Distribution

A distribution circuit is installed on existing structures in Segment 5. This infrastructure will be transferred from existing structures to replacement structures.

#### 3.3.2.2.3 Substations

The GKR Project would include the following substation-related work:

- Disconnect existing conductor from existing positions at the existing Banducci, Gorman, and Kern River 1 Hydroelectric substations and connect new conductor to existing substation positions.
- Install new OPGW and make minor modifications to the existing terminal racks at the existing Gorman and Kern River 1 Hydroelectric substations to accommodate the new OPGW.
- Install telecommunication equipment on existing rack structures, install cable in new or existing underground cable raceways, and install new or replacement of existing telecommunications infrastructure within existing control buildings or mechanical-electrical equipment rooms (MEERs) at the existing Banducci, Gorman, and Kern River 1 Hydroelectric substations.
- Update relay settings at the existing Banducci, Gorman, and Kern River 1 Hydroelectric substations.

There are two phases associated with the GKR Project: the construction phase and the operations and maintenance (O&M) phase. This PEA addresses the construction phase and its potential impacts. Construction of the GKR Project will not be phased; construction of any one component or all components could be performed at any one time.

At present, SCE is performing O&M activities along the existing subtransmission lines included in the GKR Project, and any past and potential future impacts associated with these O&M activities are considered part of the existing environment. Therefore, the potential impacts that may result during the O&M phase are not addressed unless such potential future impacts differ from the potential future impacts that may result from performing O&M activities along the existing subtransmission lines included in the GKR Project.

### *3.3.2.3 Overview Map*

An overview map showing each segment is provided in Figure 3.1-1.

## 3.3.3 Existing Facilities

### *3.3.3.1 Types of Existing Facilities to be Removed or Modified*

Existing structures (LSTs and associated foundations, wood poles, and wood pole H-frames), and the conductor and OHGW (where installed) supported by those structures, would be removed under the GKR Project. No other facilities would be removed or modified under the GKR Project.

#### 3.3.3.1.1 Structures to be Removed

Under the GKR Project, existing subtransmission structures would be removed. Existing structures to be removed would be removed completely, except as described below in Section 3.3.3.3. Photographs of the existing structure types to be removed are shown in Figures 5.1-2a through 5.1-2i. The typical dimensions of such structures are presented in Table 3.3-1.

The existing structures presented in Table 3.3-1 account for approximately 44.94 acres of permanent disturbance.[10]

---

[10] Existing LSTs and TSPs are assumed to each account for 0.1 acres of permanent disturbance, resulting in 40.1 acres. Existing H-frame structures and two-pole structures are assumed to each account for 0.06 acres of permanent disturbance, resulting in 4.38 acres. Existing three-poles structures are assumed to each account for 0.07 acres of permanent disturbance, resulting in 0.21 acres. Existing poles are assumed to each account for 0.05 acres of permanent disturbance, resulting in 0.25 acres.

**Table 3.3-1. Approximate Number of Existing Structures to be Removed or Modified**

| Pole Type | Number of Structures Removed | Number of Structures Modified | Approximate Height Above Ground, Existing and Modified Structures (Feet) |
|---|---|---|---|
| **Segment 1** | | | |
| LST | 117 | 6 | 29 – 95 |
| H-frame | 38 | 0 | 51 – 71 |
| Two-pole structure | 1 | 0 | 66 |
| **Segment 2** | | | |
| LST/TSP | 189 | 0 | 47 – 100 |
| H-frame | 3 | 0 | 50 – 62 |
| Poles | 2 | 0 | 81 – 92 |
| **Segment 3** | | | |
| LST | 37 | 0 | 31 – 61 |
| H-frame | 16 | 0 | 37 – 79 |
| Two-pole structure | 3 | 0 | 75 – 78 |
| Pole | 1 | 0 | 34 |
| **Segment 4** | | | |
| LST | 58 | 0 | 52 – 78 |
| H-frame | 12 | 0 | 52 – 71 |
| Three-pole structure | 3 | 0 | 51 – 53 |
| **Segment 5** | | | |
| Pole | 2 | 4 | 50 – 60 |

#### 3.3.3.1.2 Structures to be Modified

In Segment 1, approximately 6 existing structures (LSTs) would be modified (existing hardware would be removed, and new hardware installed) to accommodate the installation of OPGW and the installation of replacement conductor. In Segment 5, insulators would be replaced on existing structures and the distribution circuit underbuild would be modified on one other existing structure.

#### 3.3.3.1.3 Conductor to be Removed

At present, the existing conductor installed along the GKR Project subtransmission lines is a mix of 336.4 aluminum-conductor steel-reinforced (ACSR) 30/7 'Oriole', 336.4 ACSR 18/1 'Merlin', and 4/0 7-strand copper conductor, with diameters of approximately 0.74 inches, 0.68 inches, and 0.52 inches, respectively. Approximately 260 linear miles of existing conductor would be removed.[11] The hardware associated with the existing conductor, including insulators, clamps, fittings, etc., would also be removed as part of the GKR Project.

### *3.3.3.2 Description of Existing Facilities by Segment*

The quantities and types of existing facilities to be removed are described by Segment in the following sections.

[11] For a single-circuit line, 1 physical mile of line equates to 3 linear miles of conductor, as there are three conductors per circuit.

##### 3.3.3.2.1 Segment 1

Existing structures in Segment 1 are double circuit structures. Approximately 154 structures will be removed and replaced with new structures. Existing conductors will be removed and replaced with new conductors for a single circuit. OPGW will also be installed onto the structures. Existing marker balls installed in the span between structures M1-T3 and M1-T4 would be removed and installed on the OPGW. Approximately 122.4 linear miles of existing conductor would be removed.

##### 3.3.3.2.2 Segment 2

Existing structures will be removed including the single circuit conductors. New structures will be installed including new single circuit conductors and OPGW. Approximately 79.5 linear miles of existing conductor would be removed.

##### 3.3.3.2.3 Segment 3

Existing structures will be removed including existing conductors. New structures will be installed including new conductors and OPGW. A portion of this segment is double circuit. Approximately 24.6 linear miles of existing conductor would be removed.

##### 3.3.3.2.4 Segment 4

Existing structures and conductors will be removed. New structures will be installed including new conductors and OPGW. Approximately 33.9 linear miles of existing conductor would be removed.

##### 3.3.3.2.5 Segment 5

Existing subtransmission structures in Segment 5 are single-circuit with a distribution circuit underbuild. Approximately two existing poles would be removed and replaced with new poles; no conductor or distribution circuit would be removed; however, these facilities would be transferred to the new poles.

#### *3.3.3.3 Above-Ground and Below-Ground Facilities*

All facilities to be removed are above-ground facilities; no below-ground facilities (underground conduit, cable, etc.) would be removed under the GKR Project.

Some existing structures (LSTs and TSPs) are attached to foundations. Wood poles, LWS poles, and H-frames are direct-buried. The entirety of a wood or LWS pole identified for removal (both the above-ground and below-ground portions) would be removed unless removal of the below-ground portion presents potential environmental impacts (such as erosion or soil instability risk) that could be avoided by leaving the below-ground portion in-place. Where LSTs and/or TSPs are identified for removal, the above-ground steel would be removed in their entirety. Foundations would typically be removed 2-3 feet below grade and the holes would be filled with excess native soil from the area and smoothed to match the surrounding grade. Foundations may be left in-place in locations where their removal may cause slope or soil instability and thus could contribute to localized erosion. Foundations would not be left in-place in locations that could pose a hazard to the public.

The below-ground depths of the existing LST foundations and the embedded depth of wood poles and wood-pole H-frames are unknown. The above-ground height of the existing LSTs, wood poles, wood pole H-frames, and three-pole structures that would be removed are presented in Table 3.3-1.

#### *3.3.3.4 Disposition of Existing Facilities*

The above-ground portions of existing structures would generally be removed completely. The below-ground portions of wood poles, wood pole H-frames, and three-pole structures would be removed completely; foundations would typically be removed 2-3 feet below grade. These existing structures would be removed as they will no longer be needed after replacement structures are installed. Some existing LSTs in Segment 1 will be modified to accommodate the new conductor to be installed under the GKR Project; these LSTs are more-recently installed than other existing infrastructure, and thus are amenable to modification (installation of new hardware, insulators, etc.) and do not need to be replaced.

#### *3.3.3.5 Names, Types, and Materials of Existing Facilities*

The following structures would be removed or modified as part of the GKR Project:

- LST: Self-supporting tower structure constructed from galvanized steel that has foundations.
- TSP: Self-supporting monopole structure constructed from galvanized steel that has a foundation.
- Wood Pole: Self-supporting or guyed structure that is direct-buried.
- Wood Pole H-frame: Self-supporting or guyed H-frame structure constructed from two direct-buried wood poles including a spar arm.
- LWS Pole: Self-supporting or guyed structure constructed from galvanized steel that is direct-buried.
- LWS Pole H-frame: Self-supporting or guyed H-frame structure constructed from two LWS poles that are direct-buried including a spar arm.
- Three-Pole Structure: Self-supporting or guyed structure constructed from three direct-buried wood poles.

There are no capacities or volumes associated with any of the structures to be removed or modified under the GKR Project.

#### *3.3.3.6 Existing Facility Diagram*

Images of the existing structure types that would be removed under the GKR Project are found in Figure 5.1-2a through 5.1-2i.

#### *3.3.3.7 Surface colors, Textures, Light Reflectivity, and Lighting*

The LSTs to be removed are grey in color; the surface texture is weathered; the galvanized steel is moderately light reflective; and there is no aviation safety lighting of, or other lighting on, the existing lattice steel structures. The wood poles, wood pole H-frames, and three-pole structures to be removed are brown in color; the surface texture is grainy and often vertically-striated; the poles, H-frames, and three-pole structures are generally not light reflective as they are wood; and there is no aviation safety lighting of the existing poles and H-frames. Appendix A provides drawings of the existing structure types that would be removed under the GKR Project. No structures to be removed have lighting installed on them.

### 3.3.4 Proposed Facilities

#### *3.3.4.1 Facilities to be Installed or Modified*

No substations, switching stations, gas storage facilities, gas pipelines, or service buildings would be installed under the GKR Project.

Under the GKR Project, new subtransmission structures, new subtransmission conductor, new OPGW, and new ADSS fiber optic cable would be installed. Existing substations would be modified as addressed below in Section 3.3.8. The locations of these facilities are illustrated in Appendix A.

#### 3.3.4.1.1 Subtransmission Structures Description

New subtransmission structures (single TSPs, TSP H-frames, LWS pole H-frames, and single LWS or wood poles), and new overhead conductor and OPGW or ADSS fiber optic cable to be supported on those structures, would be installed under the GKR Project. No other wholly new facilities would be installed under the GKR Project. Replacement structures could be located proximate to existing structures in the existing alignments.

TSPs are engineered structures constructed from galvanized steel; the design of a given TSP is specific to the location and engineering considerations of that given TSP. TSPs would be either installed on a drilled, poured-in-place, concrete foundation, would be installed on drilled micro-piles, or would be direct-buried. LWS poles are structures constructed from galvanized steel; LWS poles are non-engineered wood pole-equivalents. LWS poles would be direct-buried; in some locations, steel, cardboard, or plastic forms may be placed to stabilize the excavation walls prior to installation of the pole. TSP H-frames are constructed from two TSPs supporting a horizontal member between them. LWS pole H-frames are constructed from two LWS poles supporting a horizontal member between them.

In Segment 1, single-circuit structures would replace the existing double-circuit structures. In all other segments, the number of conductors would be unchanged (e.g., an existing single-circuit structure would be replaced with a new single-circuit structure, an existing double-circuit structure would be replaced with a new double-circuit structure, etc.).

Subtransmission facilities would be designed consistent with the Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (Avian Power Line Interaction Committee 2006) where feasible. Subtransmission facilities would also be evaluated for potential collision reduction devices in accordance with Reducing Avian Collisions with Power Lines: The State of Art in 2012 (Avian Power Line Interaction Committee 2012).

#### 3.3.4.1.2 Conductor/Cable

Under the GKR Project, new ACCC and/or ACSR conductor would be installed along the lengths of Segments 1, 2, 3, and 4. The conductor would be non-specular and would have a diameter of approximately 0.81 inches or 1.196 inches, respectively. Approximately 199 linear miles of new conductor would be installed (accounting for three miles of conductor per mile of single-circuit alignment in Segments 1, 2, and 4, and six miles of conductor per mile of double-circuit alignment in Segment 3).

OPGW and/or ADSS fiber optic cable would be installed along the lengths of Segments 1, 2, 3, 4, and 5. The OPGW would be installed for system protection, and would also serve as a communications link between the existing Banducci, Gorman, and Kern River 1 Hydroelectric substations. The OPGW would be non-specular and would have a diameter of approximately 0.5 inches. Approximately 62.3 linear miles of new OPGW would be installed along the length of Segments 1, 2, 3, and 4. The OPGW would be installed overhead at the top of structures. The ADSS fiber optic cable would be non-specular and would have a diameter of approximately 0.5 inches. Approximately 3 linear miles of ADSS fiber optic cable would be installed along the length of Segment 5. The ADSS fiber optic cable would be installed below the conductor on replacement and existing structures.

### *3.3.4.2 Description of Facilities by Segment*

An accounting of the numbers and types of structures proposed to be installed, by Segment, are presented in Table 3.3-2; this table also presents the range of above-ground and below-ground dimensions of proposed structures.

###### *3.3.4.2.1.1 Segment 1*

The following components will be installed in Segment 1:

- Install approximately 38 single-circuit TSPs.
- Install approximately 2 single-circuit TSP H-frames.
- Install approximately 114 single-circuit LWS poles.
- Replace/reuse/modify approximately 6 LSTs.
- Install one circuit of new conductor on replacement structures along the 20.4-mile length of Segment 1.
- Install approximately 20.4 linear miles of OPGW on replacement and reused structures.
- Install marker balls on overhead wire if and where determined to be appropriate.

###### *3.3.4.2.1.2 Segment 2*

The following components will be installed in Segment 2:

- Install approximately 46 single-circuit TSPs.
- Install approximately 2 single-circuit LWS pole H-frames.
- Install approximately 147 single-circuit LWS poles.
- Install one circuit of new conductor on replacement structures along the 26.5-mile length of Segment 2.
- Install approximately 26.5 linear miles of OPGW on replacement structures.
- Install marker balls on overhead wire if and where determined to be appropriate.

###### *3.3.4.2.1.3 Segment 3*

The following components will be installed in Segment 3:

- Install approximately 18 double-circuit TSPs.
- Install approximately 29 double-circuit LWS poles.
- Install two circuits of new subtransmission conductor on replacement structures along the 4.1-mile length of Segment 3.
- Install approximately 4.1 linear miles of OPGW on replacement structures.
- Install marker balls on overhead wire if and where determined to be appropriate.[12]

---

[12] All GKR Project components within Segment 3 would be built overhead. However, prior to construction of the GKR project approximately 0.6 miles of the Gorman-Kern River 1 66 kV and Gorman-Frazier Park 66 kV subtransmission lines may be converted from overhead to underground at the request of the developer of the Tejon Ranch mixed-use Centennial Project, pursuant to SCE Tariff Rule 20. The Rule 20 potential undergrounding work is a distinct project that has independent utility from the GKR Project and would be undertaken regardless of whether the GKR Project is approved and constructed. The undergrounding work is dependent upon the third-party developer and the current schedule identifies completion of the undergrounding by Q2 2023 (i.e., prior to the Q4 2024 proposed commencement of construction on the GKR Project). If undergrounding is completed prior to the implementation of the GKR Project, no work would occur on that 0.6 mile portion of Segment 3 under the GKR Project. If the undergrounding work does not proceed SCE would construct the entirety of the GKR Project in an overhead configuration, including the 0.6 miles discussed above.

*3.3.4.2.1.4 Segment 4*

The following components will be installed in Segment 4:

- Install approximately 17 single-circuit TSPs.
- Install approximately 2 single-circuit TSP H-frames.
- Install approximately 46 single-circuit LWS poles.
- Install approximately 9 LWS H-frames.
- Install one circuit of new subtransmission conductor on replacement structures along the 11.3-mile length of Segment 4.
- Install approximately 11.3 linear miles of OPGW on replacement structures.
- Install marker balls on overhead wire if and where determined to be appropriate.

*3.3.4.2.1.5 Segment 5*

The following components will be installed, and activities performed, in Segment 5:

- Install 2 new single-circuit poles and transfer existing conductor to new poles; third-party infrastructure may also be transferred, or left in-place on existing poles.
- Replace insulators on some existing poles.
- Modify the distribution underbuild on some existing poles.
- Install approximately 3 linear miles of ADSS fiber optic cable on replacement and existing poles.

### *3.3.4.3 Above-ground and Below-ground Facilities*

All facilities to be installed under the GKR Project, with the exception of those facilities addressed in Section 3.3.7, are considered above-ground facilities. The TSPs and LWS poles to be installed have both above-ground and below-ground portions; TSPs would be installed on concrete foundations or on micro-piles, or could be direct-buried, and LWS poles would be direct-buried. The range of burial depth or size of foundations associated with the TSPs and LWS poles is presented in Table 3.3-2.

**Table 3.3-2. Structures to be Installed**

| Pole Type | Proposed Approximate Number of Structures | Approximate Height Above Ground (Feet) | Approximate Pole Diameter (Feet) | Approximate Foundation Depth (TSPs) or Burial Depth (LWS poles) (Feet) | Approximate Foundation Diameter (TSPs) or Auger Width (LWS pole) (Feet) | Approximate Concrete Volume (Cubic Yards) |
|---|---|---|---|---|---|---|
| **Segment 1** | | | | | | |
| TSP | 38 | 50 – 100 | 2.4 – 3.7 | 10 – 30 | 3 – 4 | 1.8 – 7 |
| TSP, H-frame | 2 | 55 – 70 | 2.6 – 2.7 | 10 – 30 | 4 – 8 | 2.3 – 14 |
| LWS Pole | 114 | 52 – 97 | 1.5 – 2.7 | 7 – 14 | 2 – 3 | N/A |
| **Segment 2** | | | | | | |
| TSP | 46 | 60 – 105 | 2.0 – 4.3 | 9 – 13 | 4 – 8 | 2.3 – 14 |
| LWS H-frame | 2 | 52 – 57 | 1.5 – 1.6 | 7 – 14 | 2 – 3 | N/A |
| LWS Pole | 147 | 52 – 84 | 1.5 – 2.6 | 7 – 14 | 2 – 3 | N/A |

**Table 3.3-2. Structures to be Installed**

| Pole Type | Proposed Approximate Number of Structures | Approximate Height Above Ground (Feet) | Approximate Pole Diameter (Feet) | Approximate Foundation Depth (TSPs) or Burial Depth (LWS poles) (Feet) | Approximate Foundation Diameter (TSPs) or Auger Width (LWS pole) (Feet) | Approximate Concrete Volume (Cubic Yards) |
|---|---|---|---|---|---|---|
| **Segment 3** | | | | | | |
| TSP | 18 | 65 – 90 | 2.8 – 3.6 | 9 – 11 | 4 – 8 | 2.1 – 5.1 |
| LWS Pole | 29 | 66 – 106 | 1.8 – 3.0 | 7 – 14 | 2 – 3 | N/A |
| **Segment 4** | | | | | | |
| TSP | 17 | 60 – 120 | 2.0 – 4.3 | 10 – 30 | 4 – 8 | 2.3 – 14 |
| TSP, H-frame | 2 | 50 – 65 | 2.1 – 2.8 | 10 – 30 | 4 – 8 | 2.3 – 14 |
| LWS Pole | 46 | 61 – 106 | 1.5 – 3.0 | 7 – 14 | 2 – 4 | N/A |
| LWS H-frame | 9 | 52 – 84 | 1.5 – 2.6 | 7 – 14 | 2 – 3 | N/A |
| **Segment 5** | | | | | | |
| Pole | 2 | 61 | 1.5 | 7 – 14 | 2 | N/A |

### *3.3.4.4 Different Facilities*

No unique structures such as riser poles (overhead-to-underground configuration poles) would be installed under the GKR Project. Dead-end structures or those installed at high-angle inflection points would generally be of a larger diameter than adjoining tangent structures. Pole-switches would be installed at “the T” where Segments 1, 2, and 4 meet (refer to Figure 3.1-1).

Guys are typically used when LWS poles or LWS H-frames are located on angles, corners, and dead-ends to provide support to the poles. Guys may also be used on tangent/suspension poles as field conditions dictate. Guying consists of a guy wire (down guy) that is fastened to a pole and attached to a buried anchor, or when there is not adequate space for the required down guy, a shorter guy pole (stub pole) is typically placed with a down guy and buried anchor in a location that has sufficient room for these facilities. The need for and location of guy wires and anchors for LWS poles and LWS pole H-frames would be determined during final engineering and construction on a case-by-case basis. Guying across a roadway would be avoided where feasible.

### *3.3.4.5 Civil Engineering Requirements*

#### 3.3.4.5.1 Permanent Roads

No new permanent roads are included as part of the GKR Project.

#### 3.3.4.5.2 Foundations

Some TSPs, or equivalent structures, installed under the GKR Project would be attached to a concrete foundation or installed on an engineered micro-pile foundation. TSP concrete pile foundations would be approximately 4 to 6 feet in diameter and would extend underground approximately 10 to 30 feet with approximately 1 to 3 feet of concrete visible above ground. Each TSP would use approximately 1.7 to 13 cubic yards of concrete.

Where necessary, foundations may also be installed utilizing micro-piles. Installation of micro-piles would require the drilling of several smaller diameter holes (approximately 7-10, 8-inch holes) for each foundation. Rebar is placed within each hole and the holes are filled with cement grout. The micro-piles would then be tied together, to act as a single unit foundation, in a reinforced concrete cap upon which the TSP would be installed.

No other foundations are included under the GKR Project.

##### 3.3.4.5.3 Temporary Work Pads

No civil engineering is anticipated to be necessary for development of temporary work pads.

##### 3.3.4.5.4 Spill Containment

No engineered spill containment structures are included under the GKR Project.

#### *3.3.4.6 Permanent and Temporary Facilities*

Approximately two temporary wood poles would be installed and then removed at the junction of Segments 2 and 3 to facilitate construction. No other temporary facilities (i.e., poles, shoo-fly lines, mobile substations, mobile compressors, transformers, capacitors, switch racks, compressors, valves, or driveways) beyond those addressed elsewhere in this document (such as the guard structures discussed in Section 3.5.5.4) are included in the GKR Project.

#### *3.3.4.7 Names, Types, and Materials of Proposed Facilities*

The following structures would be installed or modified under the GKR Project:

- TSPs: Self-supporting monopole structure constructed from galvanized steel.
- TSP H-frame: Self-supporting H-frame structure constructed from two TSPs and a horizontal member attached to two galvanized steel TSPs.
- LWS Pole: Self-supporting or guyed monopole structure constructed from galvanized steel.
- Wood Pole: Self-supporting or guyed monopole structure constructed from wood.
- LWS Pole H-frame: Self-supporting or guyed H-frame structure constructed from two LWS poles and a horizontal member attached to two galvanized steel LWS poles.
- LSTs: Self-supporting tower structures constructed from galvanized steel members.

There are no capacities or volumes associated with any of the facilities to be installed or modified under the GKR Project.

#### *3.3.4.8 Diagrams of the Proposed Structures*

Diagrams of the proposed structures are presented in Appendix A. The typical dimensions of such structures are presented in Table 3.3-2.

#### *3.3.4.9 Surface colors, Textures, Light Reflectivity, and Lighting*

The TSPs and LWS poles installed under the GKR Project would be grey in color, with a dull non-specular finish. Since the galvanized steel would be dull, the light reflectivity of the TSPs and LWS poles would be moderate and would lessen over time as the poles weather. Wood poles installed would be light to dark brown in color and would be non-reflective. SCE does not anticipate any new structure lighting would be installed under the GKR Project, except as described in Section 3.3.5.1 below. The overhead conductor, OPGW, and ADSS fiber optic cable to be installed would be dulled and non-specular.

### 3.3.5 Other Potentially Required Facilities

#### *3.3.5.1 Other Actions or Facilities that may be Required*

##### 3.3.5.1.1 Unconnected Utilities or Other Types of Infrastructure

The GKR Project would not require the modification or replacement of unconnected utilities or other types of infrastructure. Unconnected, third-party infrastructure, where present, would be transferred to new structures where applicable, or would be left in-place on existing structures.

##### 3.3.5.1.2 Aviation Lighting and/or Marking

The FAA has not made a determination regarding the lighting or marking of any component of the GKR Project.

##### 3.3.5.1.3 Additional Civil Engineering Requirements to Address Site Conditions or Slope Stabilization Issues

The need for slope stabilization, including retaining walls, is addressed in Sections 3.5.1.1, 3.5.2.2, 3.5.3.1, and 3.5.4.5.

The GKR Project is not anticipated to include additional civil engineering requirements to address site conditions or slope stabilization issues. The establishment and use of construction work areas would generally not require slope stabilization; in areas where structures are located in areas with steep slopes, structures could be accessed either by foot or by helicopter, thus negating the need to prepare a construction work area for a vehicle at that structure. Where the siting of construction work areas is fully or partially discretionary (e.g., the siting of conductor stringing sites), such work areas have been preferentially sited in areas that will not require slope stabilization.

If, during the final engineering process, the need for retaining walls is identified, the location, length, height, and type of such walls would be communicated to the CPUC. If the need for extensive rehabilitation is identified, a Minor Project Refinement and associated environmental effects analysis would be developed and submitted to the CPUC. Local ministerial permits required would also be obtained.

#### *3.3.5.2 Location of Each Facility*

The locations of unconnected utilities and other types of infrastructure are displayed on Figure 5.19-1.

### 3.3.6 Future Expansions and Equipment Lifespans

#### *3.3.6.1 Current and Reasonably Foreseeable Plans for Expansion*

There are no current and reasonably foreseeable plans for expansion or future phases of development associated with the GKR Project.

#### *3.3.6.2 Expected Usable Life*

The structures, conductor, and overhead cable to be installed under the GKR Project could have a usable life of greater than 40 years.

#### *3.3.6.3 Reasonably Foreseeable Consequences*

There are no reasonably foreseeable consequences of the GKR Project; the project is designed to remediate discrepancies and address reliability concerns related to aging infrastructure, not to provide new or additional electrical service that could facilitate or trigger the expansion or upgrading of the infrastructure associated with the GKR Project.

### 3.3.7 Below-Ground Conductor/Cable Installations

#### *3.3.7.1 Type of Line to be Installed*

No electrical conductor would be installed below-ground under the GKR Project. Fiber optic cable would be installed underground at and in the vicinity of the existing Banducci, Gorman, and Kern River 1 Hydroelectric substations.

#### *3.3.7.2 Type of Casing*

The fiber optic cable would be installed in a concrete-encased duct bank system. The dimensions of the duct bank are presented in Figure 3.3-1.

#### *3.3.7.3 Type of Infrastructure Installed within the Duct Bank*

Fiber optic cable only would be installed within the duct banks.

### 3.3.8 Electric Substations and Switching Stations

No new electric substations or switching stations would be constructed under the GKR Project.

#### *3.3.8.1 Transformer Banks*

No transformer banks would be added under the GKR Project.

#### *3.3.8.2 Gas Insulated Switchgear*

No gas insulated switchgear would be installed under the GKR Project.

#### *3.3.8.3 Operation and Maintenance Facilities, Telecommunications Equipment, or SCADA Equipment*

No O&M facilities would be installed under the GKR Project. At the existing Banducci, Gorman, and Kern River 1 Hydroelectric substations, electronic equipment will be installed to provide diverse line protection. Supervisory control and data acquisition/telecommunications-related modifications would generally include the installation of equipment on existing rack structures, the installation of cable in new or existing underground cable raceways, and the installation of new or replacement of existing telecommunications infrastructure within existing control buildings or MEERs. System protection-related modifications at the three substations would include reprogramming relays.

### 3.3.9 Gas Pipelines

No gas pipelines are included in the GKR Project.

### 3.3.10 Gas Storage Facilities – Background and Resource Information

No gas storage facilities are included in the GKR Project.

### 3.3.11 Gas Storage Facilities – Well-Head Sites

No gas storage facilities are included in the GKR Project.

### 3.3.12 Gas Storage Facilities – Production and Injection

No gas storage facilities are included in the GKR Project.

### 3.3.13 Gas Storage Facilities – Electrical Energy

No gas storage facilities are included in the GKR Project.

### 3.3.14 Telecommunication Lines

#### *3.3.14.1 Type of Cable and Linear Lengths*

The OPGW that would be installed under the GKR Project serves as both system protection (e.g., lightning protection) and as a telecommunication line. The ADSS fiber optic cable that would be installed under the GKR Project serves as a telecommunication line. The linear miles by Segment is as follows:

- Segment 1: 20.4 linear miles of OPGW
- Segment 2: 26.5 linear miles of OPGW
- Segment 3: 4.1 linear miles of OPGW
- Segment 4: 11.3 linear miles of OPGW
- Segment 5: 3 linear miles of ADSS

The installation location and characteristics of the OPGW and ADSS fiber optic cable to be installed above-ground is addressed in Section 3.3.4.1.2, Conductor/Cable.

#### *3.3.14.2 Antenna and Node Facilities*

No antenna or node facilities are part of the GKR Project.

#### *3.3.14.3 Below-Ground Telecommunication Line*

Fiber optic cable would be installed below-ground within and immediately adjacent to the existing Banducci, Gorman, and Kern River 1 Hydroelectric substations. Fiber optic cable would be routed below-ground from the control building or MEER at these substations to a getaway structure, and then would transition to an above-ground configuration.

#### *3.3.14.4 Above-Ground Telecommunication Line*

##### 3.3.14.4.1 Type of Poles

No structures will be installed exclusively for the supporting of telecommunication line.

##### 3.3.14.4.2 Existing Poles

Existing structures in Segment 1 will be used to support OPGW; existing structures in Segment 5 will be used to support ADSS.

##### 3.3.14.4.3 Additional Infrastructure

Telecommunication line appurtenances include splice boxes and risers, among other infrastructure. Risers are small-diameter (2-5 inch) plastic or galvanized steel conduit attached with strapping to poles or other structures through which fiber optic cable is placed to transition from an overhead to an underground configuration. Splice boxes are metal or plastic enclosures, frequently of dimensions approximating 36 x 36 x 10-inch, that are attached to attached to subtransmission structures with strapping.

## 3.4 Land Ownership, Rights-of-Way, and Easements

### 3.4.1 Land Ownership

The GKR Project is located on private lands with the following exceptions:

- Federal Land
  - The northernmost approximately 0.4 miles of Segment 1 is located on and over federal lands (SNF) managed by the USFS.
  - An approximately 0.08-mile length of Segment 2 is located on and over federal lands (LPNF) managed by the USFS.
- State Land
  - The GKR Project is located on and over state lands where the alignment crosses state highways owned and administered by Caltrans
- County/City Lands
  - The GKR Project is located on and over county and city lands where the alignment crosses county- or city-maintained roadways.

Work at the existing Banducci and Gorman substations would be performed on lands owned by SCE. Work at Kern River 1 Hydroelectric Substation would be performed on federal lands managed by the USFS.

### 3.4.2 Existing Rights-of-Way or Easements

#### *3.4.2.1 Existing Rights-of-Way or Easements: Identification and Description*

SCE has rights over a majority of the length of the GKR Project alignment. The ROW on the SNF is 100 feet wide and on the LPNF is 50 feet wide. The existing easements on state lands, where present, range from 25 to 50 feet wide. Easements over private lands vary in width from 13 feet to 100 feet. Portions of the GKR Project alignment also cross county and city roadways in franchise.

#### *3.4.2.2 Existing Rights-of-Way or Easements: Replacement, Modification, or Relocation of Project Facilities*

The GKR Project proposes to replace structures in close proximity to the existing facility alignment and would be able to use portions of the existing ROW for the proposed structures.

### 3.4.3 New or Modified Rights-of-Way or Easements

#### *3.4.3.1 New Permanent or Modified ROWs or Easements*

SCE does not possess sufficient ROW or easements for approximately 7.4 miles of the GKR Project alignment. SCE would acquire permanent easements across these parcels. SCE would seek to obtain a 70-foot ROW for each subtransmission line. However, the specific width of these easements would be developed during the final engineering process.

#### *3.4.3.2 Acquisition of New Permanent or Modified Rights-of Way or Easements*

New permanent easements over private lands would be obtained by SCE through negotiations with landowners. New permanent or modified ROWs may be obtained from the relevant public agency through that agency's designated process. All acquisitions would be finalized during Final Engineering.

#### 3.4.3.3 Properties/Parcels That May Require Acquisition

No properties or parcels, or partial properties or parcels, would be acquired in fee.

The parcels over which new easements would be acquired are presented in Figure 3.4-1.

#### 3.4.3.4 New Rights-of-Way or Easements: Development Restrictions

The terms of any new ROWs or easements are not known at this time. However, SCE would not negotiate or obtain ROWs or easements with terms that would be restrictive to the construction, operation, or maintenance of its infrastructure.

#### 3.4.3.5 Relocation or Demolition of Commercial or Residential Property or Structures

No commercial or residential properties or structures would be relocated or demolished as part of the GKR Project.

### 3.4.4 Temporary Rights-of-Way or Easements

#### 3.4.4.1 Temporary Rights-of-Way or Easements: Required for Access

No temporary ROWs or easements would be required for access purposes. Construction work areas would be accessed via existing access roads, which are either covered under existing easements or would be covered by the new permanent easements.

#### 3.4.4.2 Temporary Rights-of-Way or Easements: Construction Area Locations

Generally, construction work areas located along the GKR Project alignment that may require temporary rights are conductor stringing sites and structure installation/removal locations at points of inflection (angles) in the GKR Project alignment; off-alignment construction work areas that may require a temporary easement include staging areas and helicopter landing zones. SCE anticipates obtaining temporary rights for all of the staging areas listed in Section 3.5.2 below.

Most temporary construction areas would be located within the existing ROWs or easements; use of these areas is available to SCE without a temporary right. The large majority of these temporary construction areas would be located where existing structures are to be removed and where new structures are to be installed. Other temporary construction areas that would be located wholly or partially within the existing ROWs or easements include staging areas, conductor stringing sites, and guard structures. Where portions of temporary construction areas extend beyond the easement boundary, SCE would obtain a Temporary Construction Easement or Temporary Entry Permit from the landowner.

#### 3.4.4.3 Temporary Rights-of-Way or Easements: Acquisition

Temporary ROWs on federal lands (if identified during final engineering as necessary) would be acquired from the USFS. On non-federal and state lands, SCE will work with appropriate landowners to acquire any necessary Temporary Construction Easements and/or Temporary Entry Permits. Pursuant to Cal. Pub. Util. Code Section 612, SCE also has the power of eminent domain to acquire any necessary rights for construction.

## 3.5 Construction

The following subsections describe the construction activities associated with the GKR Project.

### 3.5.1 Construction Access (All Projects)

#### *3.5.1.1 Existing Access Roads*

##### 3.5.1.1.1 Existing Access Roads: Lengths, Widths, and Ownership

Subtransmission line roads are classified into two groups: access roads and spur roads. Access roads are through roads that run between structure sites and serve as the main transportation route along subtransmission line alignments. Spur roads are roads that lead from access roads and terminate at one or more structure sites.

Construction crews would employ a network of existing dirt access and spur roads along the GKR Project alignment; this network would be accessed from paved and unpaved public roads.

Approximately 84 miles of existing SCE-maintained dirt access and spur roads would be used during the construction of the GKR Project. The widths of these roads vary across the GKR Project alignment but are generally 15 to 20 feet wide; these roads account for 180 acres of existing permanent disturbance (Table 3.5-1).

Approximately 1 mile of existing unpaved public roads are located adjacent and parallel to the GKR Project alignment such that work would be performed from the roadway. The widths of these roads vary but are generally 15 to 20 feet wide; these roads account for approximately 2.4 acres of existing permanent disturbance.

Approximately 8.5 miles of existing paved public roads are located adjacent and parallel to the GKR Project alignment such that work would be performed from the roadway. The widths of these roads vary but are generally 15 to 20 feet wide; these roads account for approximately 20.6 acres of existing permanent disturbance.

##### 3.5.1.1.2 Existing Access Roads: Modifications

Approximately 84 miles of existing access and spur roads would be employed for construction of the GKR Project. At present, all 84 miles are projected to require rehabilitation work, including regrading and repair of the existing roadbed. These roads would be cleared of vegetation; blade-graded to remove potholes, ruts, and other surface irregularities; and re-compacted to provide a smooth and dense riding surface capable of supporting heavy construction equipment. As part of this rehabilitation, vegetation within and along the existing road prism may be trimmed and/or removed to prevent vegetation from intruding into the roadway. In some locations, road base (crushed rock), temporary plating or matting may be placed within the existing road prism. This road base, temporary plating, or matting may be laid to compensate for soft soils. Road base, plating, or matting would be removed at the end of construction. This activity may be repeated as required during the course of the project.

Prior to the start of construction, some of the existing 84 miles of access and spur roads may require more extensive rehabilitation. The extent and scope of this rehabilitation is unknown at this time, as field conditions along the GKR Project alignment are subject to change. The types of more-extensive rehabilitation that may be required could include:

- Widening of the existing roadbed at curves and other locations.
- Installation of new, or repair of existing, drainage structures such as wet crossings, water bars, over side drains and pipe culverts to allow for construction traffic usage, as well as to prevent road damage due to uncontrolled water flow.

- Repair and stabilization of slides, washouts, and other slope failures by installing retaining walls or other means necessary to prevent future failures. The type of structure to be used would be based on specific site conditions.

Where existing access or spur roads cross culverted waterways, temporary plating or matting may be laid over the roadway to protect the culverts and to support the movement of heavy construction equipment. Plating or matting may also be placed in other locations depending on surface conditions at the time of construction.

#### 3.5.1.1.3 Existing Access Roads: Incidental Damage

No incidental road damage is anticipated to be caused by GKR Project activities. SCE and construction contractor crews would utilize paved and unpaved public roads to access SCE's network of unpaved access roads; work would also be performed from these paved and unpaved public roads. If ministerial permits are necessary for the movement of oversize or overweight vehicles along public roadways, or to perform work from public roadways, SCE would comply with the conditions of the permit(s), including conditions related to the repair of incidental road damage.

**Table 3.5-1. Access and Spur Road Land Disturbance**

| Project Feature | Description | Acres, Presently Disturbed | Acres to be Restored | Acres, Final Disturbed |
|---|---|---|---|---|
| Existing Dirt Access and Spur Roads | Previously-graded. Rehabilitation as described in Section 3.5.1.1. | 180 | 0 | 38[1] |
| Overland Access | No preparation required. Typically grassy areas that are relatively flat. | 0 | 3.4 | 0 |

Notes:
1 At present, existing access and spur roads account for 180 acres of disturbance. To bring these access and spur roads up to the SCE standard design, an additional 38 acres would be permanently disturbed. No disturbance outside the 18-foot width (including vegetation trimming) is included in these calculations.

#### 3.5.1.1.4 Detailed Maps and Associated GIS Data

Existing access roads are shown in Appendix A; GIS data are provided under separate electronic cover.

### *3.5.1.2 New Access Roads*

#### 3.5.1.2.1 New Access Roads

No new permanent or temporary access roads would be constructed under the GKR Project.

#### 3.5.1.2.2 Lengths, Widths, and Development Methods for New Access Roads

No new permanent or temporary access roads would be constructed as part of the GKR Project.

#### 3.5.1.2.3 New Access Roads: Gates

No new temporary or permanent gates would be installed under the GKR Project.

#### 3.5.1.2.4 New Access Roads: Restoration

No new permanent or temporary access roads would be constructed as part of the GKR Project.

#### 3.5.1.2.5 Detailed Maps and Associated GIS Data

Because no new permanent or temporary access roads are included under the GKR Project, none are shown in Appendix A and none are indicated in the GIS data.

### *3.5.1.3 Overland Access Routes*

#### 3.5.1.3.1 Overland Access Routes

Where existing spur or access roads to a construction work area are not present, and where surface conditions are amenable, that location may be accessed overland. Where overland travel is feasible, vegetation would be trimmed while leaving the root structure intact, or vehicles would drive over the extant vegetation (overland travel). In some locations, temporary matting may be placed on the surface to facilitate access to a work location. No blading, grading, or gravel placement would occur on overland access routes.

#### 3.5.1.3.2 Overland Access Routes: Lengths and Widths

Approximately 2.4 miles of new overland access routes would be used during construction of the GKR Project. No grading or gravel placement would occur in these areas. The overland access routes would be approximately 14 feet wide.

#### 3.5.1.3.3 Detailed Maps and Associated GIS Data

Overland access routes are shown in Appendix A; GIS data are provided under separate electronic cover.

### *3.5.1.4 Watercourse Crossings*

#### 3.5.1.4.1 Temporary Watercourse Crossings

No perennial watercourses are crossed at-grade; no temporary watercourse crossings would be required during construction. Ephemeral drainages are currently crossed at-grade or are culverted. These crossings, like the remainder of the access road network, are regularly maintained, including re-establishing the at-grade crossings as needed and repairing or replacing culverts as necessary. During construction of the GKR Project, these at-grade and culverted crossings would be driven over by construction equipment.

#### 3.5.1.4.2 Bridge or Culvert Replacement or Installation

No bridges would be replaced or installed as part of the GKR Project. As described in Section 3.5.1.1 above, installation or repair of culverts may be performed during the rehabilitation of existing access or spur roads. At present, fewer than 10 locations have been identified for the installation of culverts; the total number of locations for installation or repair of culverts would be determined immediately prior to or during construction based on existing field conditions at that time.

Where existing access or spur roads cross a culverted watercourse, temporary steel plating or matting may be laid over the roadway to protect the culverts and to support the movement of heavy construction equipment. Steel plating or matting may also be placed where access roads cross watercourses at-grade, depending on surface conditions at the time of construction. The need to place temporary steel plating or matting would be determined immediately prior to construction, as the locations, morphologies, and physical conditions of the ephemeral drainages crossed by the access road network are subject to change over time.

#### 3.5.1.4.3 Location, Design, and Construction Methods

The locations of temporary steel plating or matting would be determined prior to construction, as the morphologies and physical conditions of the drainages crossed by the access road network are subject to change over time.

### *3.5.1.5 Helicopter Access*

#### 3.5.1.5.1 Helicopter Access: Types and Quantities

Helicopters would be used to support construction activities along the lengths of Segments 1, 2, 3, and 4 of the GKR Project alignment. Light, medium, and heavy helicopters may be used during construction of the GKR Project. At this time, the exact total number of helicopters that may be used, and the exact number of helicopters that may be used simultaneously, is unknown. SCE would consider Institute of Electrical and Electronics Engineers Standards 951-1966, Guide to the Assembly and Erection of Metal Transmission Structures, and 524-2003, Guide to the Installation of Overhead Transmission Line Conductors in the construction of the GKR Project.

Helicopters may be used to support construction in areas where access is limited (e.g., no suitable access or spur road, limited construction area to facilitate on-site construction activities, and/or there are environmental constraints to accessing the construction work area with standard construction vehicles and equipment) or where helicopter-supported construction would provide environmental, cost and schedule savings compared to surface construction.

Light helicopter (Hughes 500 or similar) activities may include transportation of construction workers, delivery of equipment and materials to construction work area, hardware installation, marker ball installation (if applicable), and conductor and OPGW stringing operations.

Medium helicopter (Kaman K-Max or similar) activities may include delivery of equipment and materials to structure sites; installation of replacement LWS poles, LWS H-frames, TSPs, and TSP H-frame structures, and removal of existing structures.

Heavy helicopter (Sikorsky S-64 Skycrane or similar) activities may include delivery of equipment and materials to structure sites and installation of replacement TSPs and TSP H-frame structures.

#### 3.5.1.5.2 Helicopter Access: Takeoff and Landing Areas

Helicopter takeoff and landing areas typically include helicopter landing zones and staging areas, and public and private airports or airstrips. SCE anticipates using the staging areas listed in Table 3.5-2 as helicopter staging areas for the GKR Project; helicopter operation crews, as well as fueling and maintenance trucks, may be based in the staging areas.

If the construction contractor determines that helicopter-assisted construction is required at a given construction work area, and the given construction work area is not located proximate to an identified staging area, then a helicopter landing zone will be designated either along the alignment or off-alignment. In addition, helicopters should be able to land within SCE ROWs, which could include landing on access or spur roads. At night or during off days, for safety and security concerns, helicopters may be based at a local airport(s) or airstrips.

#### 3.5.1.5.3 Helicopter Access: Refueling Procedures and Locations

Helicopter refueling would generally occur off-site at local airports and at the staging areas listed in Table 3.5-2; in some instances, refueling could occur at locations along the GKR Project alignment that are not identified as staging areas. Best management practices (BMPs) WM-4, Spill Prevention and Control, and NS-9, Vehicle and Equipment Fueling, would be implemented during refueling at all locations where commercial refueling services are not available.

#### 3.5.1.5.4 Helicopter Access: Flight Paths, Payloads, and Hours and Durations of Operation

Flight paths would be determined immediately prior to construction by the helicopter contractor. Flight paths would be filed with the appropriate authorities as appropriate. Helicopter payloads would vary according to the construction activity: during conductor and OPGW installation, the payload would consist of a lightweight sock line; during structure installation and removal, the payload would comprise sections of LSTs being removed or sections of TSPs or LWS poles being installed, and human external cargo (i.e., construction workers).

The total duration of helicopter operation over the construction period is not known at this time. When operated, helicopters would generally be flown only during daytime hours (the period from 30 minutes before sunrise to 30 minutes after sunrise).

#### 3.5.1.5.5 Helicopter Access: Safety Procedures or Requirements

As necessary, SCE or its construction contractor will develop a Helicopter Lift Plan and will obtain a Congested Area Plan from the Federal Aviation Administration (FAA).

## 3.5.2 Staging Areas

### *3.5.2.1 Staging Area Locations*

#### 3.5.2.1.1 Staging Area Locations

SCE anticipates using one or more of the possible locations listed in Table 3.5-2 and shown in Figure 3.5-1 as the staging areas for the GKR Project.

#### 3.5.2.1.2 Staging Area Size

The size of each of the identified staging areas, and the total acreage associated with staging areas, is presented in Table 3.5-2.

**Table 3.5-2. Potential Staging Area Locations**

| Staging Area Name | Location | Condition | Approx. Area (Acres) | Project Component |
|---|---|---|---|---|
| 1-1 | Kern Canyon Road | Grassland | 4.0 | Segment 1 |
| 1-2 | Kern Canyon Road | Grassland | 3.5 | Segment 1 |
| 1-3 | Kern Canyon Road | Ruderal/Disturbed | 2.2 | Segment 1 |
| 1-4 | Kern Canyon Road | Disturbed | 0.9 | Segment 1 |
| 1-5 | Kern Canyon Road | Disturbed/Grassland | 1.8 | Segment 1 |
| 1-6 | Kern Canyon Road | Disturbed/Grassland | 5.0 | Segment 1 |
| 1-7 | Breckenridge Road | Disturbed | 4.2 | Segment 1 |
| 1-8 | Breckenridge Road | Disturbed/Grassland | 4.9 | Segment 1 |
| 1-9 | Bakersfield-Tehachapi Highway | Disturbed | 4.9 | Segment 1 |
| 1-10 | Bakersfield-Tehachapi Highway | Disturbed | 5.0 | Segment 1 |
| 1-11 | Bakersfield-Tehachapi Highway | Disturbed | 5.0 | Segment 1 |
| 1-12 | Tower Line Road | Disturbed | 4.8 | Segment 1 |
| 1-13 | Tower Line Road | Disturbed | 4.1 | Segment 1 |
| 1-14 | Tejon Highway | Disturbed | 2.2 | Segment 2 |
| 1-15 | Millux Road | Agricultural | 4.7 | Segment 2 |
| 1-16 | Millux Road | Agricultural | 4.9 | Segment 2 |
| 2-17 | Rancho Road | Agricultural | 4.8 | Segment 3 |
| 2-18 | Rancho Road | Agricultural | 4.9 | Segment 3 |
| 2-19 | Laval Road | Disturbed | 3.2 | Segment 3 |

**Table 3.5-2. Potential Staging Area Locations**

| Staging Area Name | Location | Condition | Approx. Area (Acres) | Project Component |
|---|---|---|---|---|
| 2-20 | Laval Road | Disturbed | 3.1 | Segment 3 |
| 2-21 | Laval Road | Disturbed | 4.5 | Segment 3 |
| 2-22 | Edmonston Pumping Plant Road | Disturbed | 1.6 | Segment 3 |
| 2-23 | Edmonston Pumping Plant Road | Asphalted | 1.5 | Segment 3 |
| 2-24 | I-5 | Disturbed | 0.8 | Segment 3 |
| 2-25 | Lebec Road | Asphalted | 4.4 | Segment 3 |
| 2-26 | Lebec Road | Disturbed | 1.4 | Segment 3 |
| 2-27 | Lebec-Clear Canyon Road | Disturbed/Grassland | 1.1 | Segment 3 |
| 3-28 | Crane Canyon Road | Disturbed/Grassland | 3.0 | Segment 3 |
| 3-29 | Frazier Mountain Road | Disturbed/Grassland | 5.0 | Segment 3 |
| 3-30 | Gorman Substation | Disturbed/Grassland | 1.5 | Segment 3 |
| 4-31 | Bear Valley Road | Disturbed/Grassland | 9.9 | Segment 4 |
| 4-32 | Bear Valley Road | Grassland | 2.2 | Segment 4 |
| 4-33 | Comanche Point Road | Grassland | 4.7 | Segment 4 |
| 4-34 | Comanche Point Road | Grassland | 5.0 | Segment 4 |
| 5-35 | Banducci Road | Grassland | 5.0 | Segment 4/5 |
| 5-36 | Banducci Road | Grassland | 4.1 | Segment 4/5 |
| | | **Total Area** | **133.8** | |

### *3.5.2.2 Staging Area Preparation*

#### 3.5.2.2.1 Site Preparation

With the exception of staging areas that are asphalted or already have a rock base, grubbing (i.e., vegetation removal) and/or minor grading will be required to provide a flat and compacted surface for the application of gravel or crushed rock. No new access roads would be constructed to access any of the staging areas. Any land that may be disturbed at the staging area would be returned to preconstruction conditions following the completion of construction for the GKR Project.

#### 3.5.2.2.2 Staging Areas: Uses

Staging areas would be used as a reporting location for workers, vehicle and equipment parking, helicopter landing zones, and as material storage areas. Materials commonly stored at the staging areas would include, but not be limited to, construction trailers, construction equipment, portable worker sanitation facilities, steel bundles, steel/wood poles, conductor/OHGW/OPGW reels, hardware, insulators, cross arms, signage, consumables (such as fuel and filler compound), waste materials for salvaging, recycling, or disposal, and Storm Water Pollution Prevention Plan (SWPPP) BMP materials such as, but not limited to, straw wattles, gravel bags, and silt fences.

A majority of materials associated with the construction efforts would be delivered by truck to designated staging areas, while some materials may be delivered directly to the temporary construction areas described in Section 3.5.3.1.

The staging areas may also have construction trailers for supervisory and clerical personnel. Normal maintenance and refueling of construction equipment would also be conducted at these staging areas. All refueling—which may include helicopters—and storage of fuels would be in accordance with the site-specific SWPPP.

#### 3.5.2.2.3 Staging Areas: Security

The staging areas would be secured through installation of temporary perimeter fencing and one or more gates; typically, chain-link fencing is used. In some instances, existing fencing may be present at the staging area location; in these instances, temporary perimeter fencing would not be installed. Other security measures that may be employed at staging areas could include cameras, privacy screening, and security personnel.

#### 3.5.2.2.4 Staging Areas: Power

Temporary power would be determined based on the type of equipment/facilities being used at the staging areas. If existing distribution facilities are available, a temporary service and meter may be used for electrical power at one or more of the yards. If it is determined that temporary power is not needed or available at the staging areas full-time, a portable generator may be used intermittently for electrical power at one or more of the yards.

#### 3.5.2.2.5 Staging Areas: Temporary Lighting

Staging areas may be lit for security; this lighting would be directed internally and on-site. If temporary lighting is needed at staging areas, portable light standards would be placed at point(s) along the outside of the staging area as necessary. The sources of illumination on the light standards would be shielded, resulting in light being directed downward and inward (toward the staging area). To the extent feasible, light standards would be positioned so that illumination is directed away from the nearest residence(s).

#### 3.5.2.2.6 Staging Areas: Grading Activities and/or Slope Stabilization

No slope stabilization or extensive grading activities would be performed at any staging area; the identified staging areas are relatively level, and thus grading activities would be focused on leveling the surface. Because generally level areas are selected for staging areas, no slope stabilization is anticipated.

## 3.5.3 Construction Work Areas

### *3.5.3.1 Construction Work Areas*

#### 3.5.3.1.1 Known Work Areas

Construction of the GKR Project would be performed in the construction work areas described in the sections below.

#### 3.5.3.1.2 Construction Work Area Activities

##### *3.5.3.1.2.1 Helicopter Landing Zones and Touchdown Areas*

The activities that may be performed at any given helicopter landing zone (including touchdown areas) will include:

- Dropping-off or picking-up construction crew members
- Dropping-off or picking-up air-portable construction equipment
- Assembly of pole sections (installation of cross-arms, hardware, etc. on a section of pole)
- Lifting of pole sections by helicopter
- Deposition of removed LSTs or LST sections
- Dropping-off or picking-up conductor sock line

- Dropping-off or picking-up conductor pull rope
- Dropping-off or picking up conductor
- Loading and unloading poles, LST sections, and other material to and from trucks

Additional activities could be performed at helicopter landing zones located within a staging area, including fueling of helicopters.

*3.5.3.1.2.2 Vehicle and Equipment Parking, Passing, or Turnaround Areas*

Vehicles and construction equipment would be parked during the day and overnight at staging areas and would be parked during the day (and potentially overnight) at pull-and-tension/stringing sites and other construction work areas along the GKR Project alignment. During work on a structure, vehicles and construction equipment would be parked during construction hours at structure work areas and guard structures, and on adjacent access or spur roads. Vehicles and construction equipment would be parked at helicopter landing zones and on adjacent access or spur roads during helicopter operations from a particular helicopter landing zone. No new passing or turnaround areas along the access and spur road network are included in the GKR Project.

*3.5.3.1.2.3 Railroad, Bridge, or Watercourse Crossings*

There are no new railroad crossings included in the GKR Project. Existing at-grade or elevated railroad crossings would be utilized during construction; at each of these crossings, temporary guard structures would be installed; these are addressed in Section 3.5.3.1.2.6 below.

No new bridges are included in the GKR Project. Watercourse crossings are addressed above in Section 3.5.1.4.

*3.5.3.1.2.4 Temporary Work Pads for Facility Installation, Modification, or Removal*

Temporary work pads (also and interchangeably referred to as construction work areas) serve as temporary working areas for crews and where project related equipment and/or materials are placed at or near each structure location. The activities that may be performed at any given temporary work pad will include:

- Install TSP
- Install TSP H-frame
- Install LWS pole
- Install LWS H-frame
- Remove existing structure (LST or pole)
- Modify LST
- Remove conductor from existing structure
- Install conductor and OPGW/OHGW on replacement structure
- Splice conductor
- Vegetation removal or trimming
- Surface grading, leveling, and/or compaction
- Benching

Additional activities could be performed at temporary work pads.

#### 3.5.3.1.2.5 *Excavations and Associated Equipment Work Areas*

No excavations except those associated with the installation of LWS poles, installation of TSP foundations, removal of existing LST or TSP foundations, and installation of underground telecommunication cable are included in the GKR Project. Excavations for the installation of underground telecommunication cable would require an equipment work area extending approximately 10 feet on either side of the telecommunication cable route.

#### 3.5.3.1.2.6 *Temporary Guard Structures*

Guard structures are temporary facilities that would typically be installed at transportation, flood control, and utility crossings prior to conductor, OHGW/OPGW/ADSS fiber optic cable removal or installation activities. These structures are designed to stop the movement of a conductor or OHGW/OPGW/ADSS fiber optic cable should it momentarily drop below a conventional stringing height. Temporary guard structures may be installed at temporary guard structure locations. Depending on the overall spacing of the conductors being installed, approximately three to five guard poles would be required on either side of a crossing. In some cases, the temporary guard structures could be substituted with the use of specifically equipped boom trucks or, at highway crossings, temporary netting could be installed if required. Guard structures would be installed at all electrical structures and roads where required. The guard structures would be removed after the conductor is secured into place.

#### 3.5.3.1.2.7 *Pull-and-Tension/Stringing Sites*

Pull-and-tension/stringing sites are those locations where the equipment necessary for removal of existing conductor and OPGW, and equipment necessary for installation of new conductor and OPGW/ADSS fiber optic cable, would be set-up and operated. The pull-and-tension/stringing sites associated with the GKR Project would be temporary.

"Wire pull" is the term used to describe the length of any given continuous wire installation process between two selected points along the line. Wire pulls are selected based on a variety of factors, including availability of dead-end structures, conductor size, geometry of the line as affected by points of inflection, terrain, and suitability of stringing and splicing equipment set-up locations. On relatively straight alignments, typical wire pulls occur approximately every 13,000 feet on flat terrain. When the line route alignment contains multiple deflections or is situated in rugged terrain, the length of the wire pull is typically diminished. Generally, pull-and-tension/stringing sites would be in direct line with the direction of the overhead conductors and established at a distance equal to approximately three times the height of the adjacent structure.

Each conductor or OHGW/OPGW/ADSS fiber optic cable removal or installation operation consists of a puller set-up positioned in a pull-and-tension/stringing site located at one end of a wire pull, and a tensioner set-up with wire reel stand truck positioned in a pull-and-tension/stringing site at the other end of a wire pull. Pull-and-tension/stringing sites may also be utilized for splicing and field snubbing of the conductors. Field snubs (i.e., anchoring and dead-end hardware) would be temporarily installed to sag conductor wire to the correct tension at locations where stringing equipment cannot be positioned in back of a dead-end structure.

#### 3.5.3.1.2.8 *Splice Sites, Conductor and Overhead Groundwire Removal*

Prior to the removal of existing conductor, the existing permanent splices found on the existing conductor identified for removal may need to be replaced with temporary splices, as permanent splices that join the conductor together cannot travel through the rollers used during conductor removal activities. At each permanent splice removal site, construction crews in one or two bucket trucks would remove the permanent splice and install a temporary splice.

*3.5.3.1.2.9 Jack and Bore Pits, Drilling Areas and Pull-back Areas for Horizontal Directional Drills*

The GKR Project does not include the installation of any infrastructure underground that would require the use of jack and bore drilling or horizontal directional drilling.

*3.5.3.1.2.10 Retaining Walls*

The GKR Project does not include the installation of retaining walls. However, during rehabilitation of access and spur roads, repair and stabilization of slides, washouts, and other slope failures may include installing retaining walls or other means necessary to prevent future failures. The type of structure to be used would be based on specific site conditions. If, during the final engineering process, the need for retaining walls or other means to prevent future failures is identified, the location, length, height, and type of such walls or other measures would be communicated to the CPUC.

### *3.5.3.2 Work Area Disturbance*

#### 3.5.3.2.1 Dimensions of Each Work Area

The dimensions of each work area described above, including the maximum area that would be disturbed during construction, is shown in Table 3.5-3 below.

#### 3.5.3.2.2 Temporary and Permanent Disturbance at each Work Area

Table 3.5-3 provides the temporary and permanent disturbance at each work area (in acres), and the total area of temporary and permanent disturbance for the entire project (in acres).

**Table 3.5-3. Work Area Disturbance Areas**

| | Number | Preferred Size (feet) | Disturbance, Temporary, Acres | Disturbance, Permanent, Acres |
|---|---|---|---|---|
| Staging Areas | 36 | Varies | 133.8 | 0 |
| Helicopter Landing Zones and Touchdown Areas | 2 | Varies | 1.25 | 0 |
| Vehicle and Equipment Parking, Passing, or Turnaround Areas | 0 | Varies | 0 | 0 |
| Railroad, Bridge, or Watercourse Crossings | 0 | Varies | 0 | 0 |
| Temporary Work Pads for Facility Installation, Modification, or Removal | | | | |
| Install TSP | 119 | 200 x 150 | 81.9 | 7.1 |
| Install TSP H-frame | 4 | 200 x 150 | 2.8 | 0.4 |
| Install LWS pole | 338 | 200 x 100 | 155.2 | 16.9 |
| Install LWS H-frame | 11 | 200 x 125 | 6.3 | 0.7 |
| Remove Existing Structure | 477 | 200 x 150 | 25.1 | 0 |
| Modify LST | 6 | 200 x 100 | 2.8 | 0 |
| Modify Existing Pole | 4 | 75 x 75 | 0.5 | 0 |
| Excavations and Associated Equipment Work Areas | 370 | Varies | 0.2 | 0 |
| Temporary Guard Structures | 194 | 75 x 75 | 25.1 | 0 |
| Pull-and-Tension/Stringing Sites | 290 | 400 x 150 | 399.4 | 0 |
| Jack and Bore Pits, Drilling Areas and Pull-Back Areas for Horizontal Directional Drills | 0 | Varies | 0 | 0 |
| Retaining walls | 0 | Varies | 0 | 0 |

**Table 3.5-3. Work Area Disturbance Areas**

| | Number | Preferred Size (feet) | Disturbance, Temporary, Acres | Disturbance, Permanent, Acres |
|---|---|---|---|---|
| Splice Sites, Conductor and Overhead Groundwire Removal | 0 | 100 x 100 | 0 | 0 |
| Splice Sites, Conductor and Overhead Groundwire Installation | 2 | 400 x 100 | 1.8 | 0 |
| Total Temporary/Permanent Disturbance Area | | | Approximately 833 acres | Approximately 25.1 acres[1] |
| Existing Permanent Disturbance Area to be Abandoned and Considered No Longer Permanently Disturbed | | | | Approximately 44.9 acres |
| Net Permanent Disturbance | | | | Approximately -19.8 acres |

Notes:

[1] The permanent disturbance associated with existing structures that will be removed will no longer be maintained after construction of the GKR Project. This permanent disturbance accounts for approximately 44.9 acres (see Section 3.3.3.1.1). Because this area will no longer be maintained, it will no longer represent a permanent disturbance. By subtracting this area from the permanent disturbance associated with structures to be installed under the GKR Project, the resulting permanent disturbance is negative.

Table 3.5-4 presents the approximate permanent disturbance associated with each structure type, and approximate maximum permanent disturbance area (in acres).

**Table 3.5-4. Permanent Disturbance Associated with Structures**

| | GKR Project (approximate metrics) |
|---|---|
| Pole Diameter:<br>• LWS Pole<br>• LWS H-frame<br>• TSP<br>• TSP H-frame | <br>36 inches<br>36 inches<br>96 inches<br>96 inches |
| Auger Hole Depth:<br>• LWS Pole<br>• LWS H-frame<br>• TSP<br>• TSP H-frame | <br>7 to 14 feet<br>7 to 14 feet<br>9 to 30 feet<br>10 to 30 feet |
| Permanent Footprint per Pole/Tower:<br>• LWS Pole<br>• LWS H-frame<br>• TSP<br>• TSP H-frame | <br>0.05 acres<br>0.06 acres<br>0.06 acres<br>0.10 acres |
| Number of Poles/Towers:<br>• LWS Pole<br>• LWS H-frame<br>• TSP<br>• TSP H-frame | <br>338<br>11<br>119<br>4 |
| Total Permanent Footprint for Poles/Towers | Approximately 25.1 acres |

### *3.5.3.3 Temporary Power*

No temporary electrical power would be required at any construction work area. Temporary power or other utility lines may be installed at one or more staging area(s) as part of the GKR Project. If it is determined that temporary power is not needed "or available" at a given staging area full-time, a portable generator may be used intermittently for electrical power at one or more of the staging areas.

## 3.5.4 Site Preparation

### *3.5.4.1 Surveying and Staking*

Prior to the start of structure installation activities, the location of each structure to be installed would be surveyed and staked. Conventional surveying techniques and equipment would be utilized.

### *3.5.4.2 Utilities*

#### 3.5.4.2.1 Underground Utility Identification Process

Under the GKR Project, prior to the start of activities that require excavation, SCE or its construction contractor would identify underground utilities by contacting DigAlert, conducting visual observations, conducting exploratory excavations (potholing), and/or using buried line locating equipment.

#### 3.5.4.2.2 Relocating Existing Utilities

No existing underground utilities would be relocated as part of the GKR Project. Existing third-party overhead utilities, that are not directly connected to the project system, and that are installed on poles to be replaced in Segment 5, would be transferred to replacement poles as part of the GKR Project, or would be left in-place on existing poles.

#### 3.5.4.2.3 Installing Temporary Power

Temporary power or other utility lines may be installed at one or more staging area(s) as part of the GKR Project. The process for installing temporary power would be determined by the service provider, but would generally include the installation of a temporary meter on a temporary structure, the temporary installation of one or more wood poles (to be installed in the same manner as guard structure poles), and the installation of temporary electrical cable from the meter to the load source(s) at the staging area(s).

### *3.5.4.3 Vegetation Clearing*

#### 3.5.4.3.1 Vegetation Clearing: Types Required

Vegetation and trees would be trimmed or removed as needed at or adjacent to construction work areas to facilitate the safe construction of the GKR Project, and to reduce fire hazards associated with construction activities. Only the minimum amount of vegetation necessary for the safe construction and operation of structures and facilities would be removed. Where feasible, construction work areas have been preferentially selected to minimize the trimming or removal of vegetation and/or trees. During road rehabilitation activities, vegetation would be trimmed and/or removed within the 18-foot wide access or spur road as necessary. Where overland travel is feasible, vegetation would be trimmed while leaving the root structure intact, or vehicles would drive over the extant vegetation.

#### 3.5.4.3.2 Vegetation Clearing: Temporary and Permanent Disturbance

The area of temporary and permanent disturbance of each vegetation community found along the GKR Project alignment is presented in Table 5.4-2. The data in this table distinguish between disturbance that would occur in previously developed areas (i.e., paved, graveled, or otherwise urbanized), and naturally vegetated areas.

#### 3.5.4.3.3 Vegetation Clearing: Description and Types of Equipment

Vegetation removal would consist of "brushing" (i.e., shrubs and other low-lying vegetation would be trimmed and/or removed within the construction work area). Vegetation removal would generally be accomplished using a mower-type attachment mounted to a tractor; in some instances, areas would be brushed by individuals using heavy-duty "weed whacker" type equipment. Vegetation growing on the road surface would be removed by a motor grader during the blade-grading of roads to remove potholes, ruts, and other surface irregularities.

Where overland travel is feasible, vegetation would be trimmed while leaving the root structure intact, or vehicles would drive overland over the extant vegetation.

### *3.5.4.4 Tree Trimming Removal*

#### 3.5.4.4.1 Tree Removal and Trimming: General Order 95-D

No tree trimming pursuant to GO 95-D would be performed as part of the construction of the GKR Project; such tree trimming (as necessary) is currently performed along the GKR Project alignment as part of the O&M activities associated with the subtransmission lines. Any tree removal performed under the GKR Project would be conducted solely to facilitate the safe construction of the project or to reduce the fire hazards associated with construction activities.

#### 3.5.4.4.2 Tree Removal and Trimming: Types, Locations, Numbers, and Sizes

Trees or portions of trees that encroach upon the 18-foot-wide access and spur road prism or on an overland travel route may be removed to facilitate the safe movement of construction equipment. Similarly, trees or portions of trees within or adjacent to staging areas and temporary work pads may be trimmed and/or removed; staging areas have been preferentially selected to minimize the trimming or removal of trees. The types, locations, approximate numbers, and size of trees that may need to be removed or trimmed substantially is provided in Appendix O.

SCE has recently performed tree and vegetation trimming and removal activities along portions of the GKR Project alignment as part of the implementation of its Wildfire Mitigation Plan (Appendix I). Because of this, tree trimming or removal activities are anticipated to be limited in scope.

#### 3.5.4.4.3 Tree Removal and Trimming: Potentially Protected Trees

The potentially protected trees to be removed or substantially trimmed are presented in Appendix O.

#### 3.5.4.4.4 Tree Removal and Trimming: Types of Equipment

Tree removal or trimming, if necessary, would be accomplished utilizing such equipment as a dump truck, pick-up truck, chipper, stump grinder, and a bucket truck, among others. Hand tools used during tree removal would include chain saws and/or hand saws.

### *3.5.4.5 Work Area Stabilization*

Work areas would be stabilized utilizing BMPs described in the SWPPPs developed and implemented for the GKR Project; typical BMPs that may be used for work area stabilization are presented in Section 3.5.11.

Generally level areas are selected for staging areas; therefore, no slope stabilization issues are anticipated. The staging area would be compacted to at least 90 percent relative density and would be capable of supporting heavy vehicles. Rock could be placed on the surface of staging areas, where appropriate, to stabilize the soils.

During rehabilitation of access and spur roads, repair and stabilization of slides, washouts, and other slope failures may include installing retaining walls or other means necessary to prevent future failures. The type of structure to be used would be based on specific site conditions. If, during the final engineering process, the need for retaining walls or other means to prevent future failures is identified, the location, length, height, and type of such walls or other measures would be communicated to the CPUC. If the need for extensive rehabilitation is identified, a Minor Project Refinement and associated environmental effects analysis would be developed and submitted to the CPUC.

Benching of temporary work pads and pull-and-tension/stringing sites may be required to provide access for foundation construction, assembly, structure erection, and wire stringing activities during line construction. Benching is a technique in which an earth moving vehicle excavates a terraced access to structure locations in extremely steep and rugged terrain. Benching may also be used on an as-needed basis in areas to help ensure the safety of personnel during construction activities.

### *3.5.4.6 Grading*

Staging areas and construction work areas could have minor grading and/or grubbing (vegetation removal) as required to provide a reasonably level and vegetation-free surface. Sites would be graded such that water would run toward the direction of the natural drainage and as directed by the SWPPP requirements. In addition, drainage would be designed to prevent ponding and erosive water flows.

Because the subtransmission lines included under the GKR Project are extant, cleared or graded work pads are located adjacent to many structures along the lines. Where present, SCE will use these existing work pads during construction of the GKR Project.

Where existing work pads are not extant, SCE will delineate temporary work pads adjacent to each structure at which work would occur under the GKR Project. Where the surface and vegetation conditions permit, construction crews would utilize overland travel approaches within these temporary work pads. Where overland travel is not feasible, the temporary work pads would be graded and/or cleared of vegetation as required to provide a reasonably level and vegetation-free surface. Sites would be graded such that water would run toward the direction of the natural drainage and as directed by the SWPPP requirements. In addition, drainage would be designed to prevent ponding and erosive water flows that could cause damage to new structure foundations or poles. The graded area would be compacted to at least 90 percent relative density and would be capable of supporting heavy vehicles.

#### 3.5.4.6.1 Earth Moving or Substantial Grading Activities Description

No earth moving or substantial grading activities (i.e., grading below a 6-inch depth) would be required under the GKR Project.

#### 3.5.4.6.2 Estimated Volumes of Grading

No earth moving or substantial grading activities (i.e., grading below a 6-inch depth) would be required under the GKR Project; therefore, no cut or fill volumes would be reused or hauled away, and no clean fill would be hauled to the site.

## 3.5.5 Transmission Line Construction (Above Ground)

### *3.5.5.1 Poles/Towers*

#### 3.5.5.1.1 Process and Equipment for Removing Poles, Towers, and Associated Foundations

*3.5.5.1.1.1 Pole Removal*

Wood poles and the wood poles that comprise the vertical members of an H-frame structure or a three-pole structure would generally be removed utilizing a line truck or similar equipment with an attached boom. The above-ground and below-ground portions of each pole would be removed. Ground crew would hand excavate at the base of the wood pole and hydraulic jacks would then be placed around the base of the pole; a boom would be attached to the pole, and the pole would then be jacked and lifted out and placed within the temporary work pad area or on a trailer. The wood pole would be transported by truck to a staging area, and then to an SCE facility for reuse or recycling.

If overland access to a given wood pole, H-frame, or three-pole structure is not present or the topography is not amenable to surface vehicle-supported construction, that pole, H-frame, or three-pole structure may be removed by helicopter. The removal would consist of the above-ground and below-ground portions of the pole(s). Crews would cut the pole approximately 4 feet above ground and fell this portion to the ground within the temporary work pad area in a controlled manner. The remaining above-ground and below-ground portions of the pole would be removed using hydraulic pole jacks and/or by hand-digging. The two portions of the pole would then be removed by helicopter; each portion would be placed on the ground within a previously disturbed area or on a trailer or flown to a helicopter landing zone. The hole left from removing the pole would be backfilled and compacted with soils that may be available as a result of the excavation for a new structure at that location, with excess soil from the area, or using imported fill as needed.

*3.5.5.1.1.2 LST and TSP Removal*

LSTs and TSPs would be removed either whole or in pieces. If the topography and land use(s) surrounding the LST or TSP are suitable, a crane would be positioned proximate to the LST or TSP within the temporary work pad area, and the crane would place the LST or TSP in tension. The LST or TSP would then be unbolted or cut from its foundations, and the LST or TSP lifted clear of its location, set down within the temporary work pad area or in another cleared or previously-disturbed area, and then dismantled by hand or with cutting tools (cutting torches, pneumatic cutters, etc.). If a crane cannot be used in a given location, an LST or TSP may be dismantled in-place by hand or with cutting tools; in these instances, crews may work from bucket trucks or man-lifts located within the temporary work pad area rather than climbing the structures.

At some locations, existing LSTs or TSPs may be removed using a helicopter if overland access for equipment is not feasible. Ground crews would unbolt or cut portions of the LST or TSP and would attach a sling to the unbolted portion. The portion of the LST or TSP would then be lifted out by the helicopter and placed in a previously disturbed area or on a trailer.

The steel components of the LST or TSP would be transported to a staging area where they would be prepared for recycling.

*3.5.5.1.1.3 Foundation Removal*

To remove LST or TSP foundations, crews would excavate around each of the foundations, and the foundations would then be demolished, generally with the use of a jackhammer or other pneumatic tool. The demolished concrete would be removed from the site and transported to a staging area prior to final disposal. Foundations would typically be removed 2-3 feet below grade; the holes left from removing the foundations would be backfilled and compacted with soils that may be available as a result of the excavation for a new structure at that location, with excess soil from the area, or using imported fill as needed. Foundations may be left in-place in locations where their removal may cause slope or soil instability and thus could contribute to localized erosion. Foundations may also be removed completely if leaving a portion of the foundations in the ground is not compatible with land use in the area.

Foundations would be sampled for the presence of asbestos prior to the start of removal activities; sampling would be performed in accordance with American Society for Testing Methods (ASTM) standard E2356-09, Standard Practice for Comprehensive Building Surveys. If asbestos-containing materials are identified, response actions will be performed in compliance with 8 CCR 1529, and overseen and monitored per ASTM standard E1368-05, Standard Practice for Visual Inspection of Asbestos Abatement Projects and ASTM standard D7201-06, Standard Practice for Sampling and Counting Airborne Fibers, Including Asbestos Fibers, in the Workplace, by Phase Contrast Microscopy (with an Option of Transmission Electron Microscopy).

If a foundation is found to be an asbestos-containing material, it will be properly abated and disposed of in a California Department of Toxic Substances Control (DTSC)-approved landfill that accepts asbestos-containing wastes. Notification to the local air quality management district having jurisdiction over the particular location will be made at least 10 business days prior to any demolition activities.

#### 3.5.5.1.2 Process and Equipment for Installing or Otherwise Modifying Poles and Towers

##### *3.5.5.1.2.1 TSP/TSP H-Frame Installation*

TSP structures typically consist of multiple sections. The TSP sections would be placed at temporary work pads at each pole location. Depending on conditions at the time of construction, the top sections may come pre-configured, may be configured on the ground, or configured after pole installation with the necessary cross arms, insulators, and wire stringing hardware. A crane would then be used to set each TSP base section on top of the previously prepared concrete pier or micro-pile foundation. Direct-buried TSPs would be installed similarly to LWS poles as described below. If existing terrain around the TSP location is not suitable to safely support crane activities, a temporary crane pad would be established within the temporary work pad. Alternately, TSPs may be set by helicopter. When the base section is secured, the subsequent section(s) of the TSP would be slipped together into place onto the base section by crane or helicopter. Hydraulic jacks may be temporarily mounted between pole sections in order to jack the pole sections together. The TSP sections may then be spot welded together for additional stability. Depending on the terrain and available equipment, the pole sections could also be pre-assembled into a complete structure prior to setting the pole. Each TSP in a TSP H-frame structure would be installed as described above. Following installation of the vertical components, the horizontal member of the TSP H-frame would be installed on the vertical poles using the same types of equipment utilized for installation of the vertical components.

##### *3.5.5.1.2.2 LWS Pole/LWS H-Frame Installation/Wood Pole*

LWS poles would be installed using a direct-buried approach. Direct-buried LWS poles would require a hole to be excavated using either an auger, backhoe, or by hand. In some locations, corrugated steel, cardboard, or plastic forms may be placed to stabilize the excavation walls prior to installation of the pole. Excavated material would be used as described in Section 3.5.14. LWS poles consist of separate base and top sections and may be placed on the temporary work pad at each pole location. Depending on conditions at the time of construction, the top sections may come preconfigured, may be configured on the ground, or configured after pole installation with the necessary cross arms, insulators, and wire-stringing hardware. The LWS poles would then be installed in the holes, typically by a line truck or crane. When the base section is secured, the top section(s) would be installed on top of it. Depending on the terrain and available equipment, the pole sections could also be assembled into a complete structure on the ground prior to setting the poles in place within the holes. LWS poles may also be installed by helicopter depending upon existing field conditions at the time of construction. The vertical components of LWS H-frames would be installed as described above. Following installation of the vertical components, the horizontal member of the LWS H-frame would be installed on the vertical poles using the same types of equipment utilized for installation of the vertical components.

*3.5.5.1.2.3 Existing Lattice Steel Tower Modification*

At the northern end of Segment 1, approximately six existing LSTs would be modified to accommodate OPGW. The modifications would include installation of new mounting hardware at the top of the LSTs. In addition, conductor-related hardware including insulators would be removed and replaced during conductor installation activities. This work would be performed by crews on the towers; crews would gain access to the LSTs by foot, overland vehicle, or helicopter.

#### 3.5.5.1.3 Foundation Installation

TSPs would be either installed on a drilled, poured-in-place, concrete foundation, installed on drilled micro-piles, or direct-buried. If a single concrete foundation is used, the hole would be drilled using truck or track-mounted excavators. Excavated material would be used as described in Section 3.5.14, Waste Generation and Management.

Following excavation of the foundations, steel-reinforced cages would be set, positioning would be survey verified, and concrete would then be poured. Foundations in soft or loose soil or those that extend below the groundwater level may be stabilized with drilling mud slurry. In this instance, mud slurry would be placed in the hole during the drilling process to prevent the sidewalls from sloughing. Concrete would then be pumped to the bottom of the hole, displacing the mud slurry. Depending on site conditions, the mud slurry brought to the surface would typically be collected in a pit adjacent to the foundation or vacuumed directly into a truck to be reused or discarded at an appropriate off-site disposal facility. TSP foundations typically require an excavated hole approximately 4 feet to 8 feet in diameter and approximately 10 feet to 30 feet deep. TSPs would require approximately 1.7 to 13 cubic yards of concrete delivered to each structure location.

Where necessary, foundations may also be installed utilizing micropiles. Installation of micropiles would require the drilling of several smaller diameter holes (approximately 7 to 10, 8-inch diameter holes) for each foundation. The holes would be drilled by a drilling rig or drilling attachment on an excavator or similar equipment. After drilling all the holes, each hole would be flushed with water or air to remove drill cuttings and loose material. Micropiles would then be installed by placing rebar in each hole with cement grout injected through grout tubes at the lowest point of each micropile, and the hole filled until viscous grout reaches the top of the casing. The micropiles would then be tied together, to act as a single unit foundation, in a reinforced concrete cap. Grout could be brought to each tower site dry and mixed at the site.

In some locations, TSPs may be direct-buried. In these locations, a hole would be excavated using either an auger or excavated with a backhoe. The space between the wall of the excavation and the TSP may be filled with native soil and concrete. Excavated material would be used as described in Section 3.5.14.

Conventional construction techniques would generally be used as described above for new foundation installation; no alternative foundation installation methods are anticipated to be used. In certain cases, equipment and material may be deposited at structure sites using helicopters or by workers on foot, and crews may prepare the foundations using hand labor assisted by hydraulic or pneumatic equipment, or other methods.

During construction, existing concrete supply facilities would be used where feasible. However, due to the remote location of some structure locations, a temporary concrete batch plant could be set up in one or more established staging areas. Equipment could include a central mixer unit (drum type); three silos for injecting concrete additives, fly ash, and cement; a water tank; portable pumps; a pneumatic injector; and a loader for handling concrete additives not in the silos. Dust emissions would be controlled by, among other measures, watering the area and by sealing the silos and transferring the fine particulates pneumatically between the silos and the mixers.

Should groundwater be encountered during excavation or drilling for foundations, it would be discharged to the surface or pumped into a tank and disposed of at an off-site disposal facility in accordance with applicable laws.

#### 3.5.5.1.4 Delivery and Assembly

TSPs and LWS poles and associated hardware would generally be delivered to each temporary work pad overland by truck. In some locations where existing access or spur roads are not amenable to the overland delivery, TSP or LWS pole sections and associated hardware may be delivered to a temporary work pad by helicopter. Depending on conditions at the time of construction, the top sections may come pre-configured (i.e., assembled at a staging area), may be configured on the ground, or configured after pole installation with the necessary cross arms, insulators, and wire stringing hardware.

#### 3.5.5.1.5 Pole Topping

No poles are anticipated to be topped as part of the GKR Project.

### *3.5.5.2 Above-ground and Underground Conductor/Cable*

#### 3.5.5.2.1 Process-Based Description

The process that may be employed for the removal and installation of above-ground conductor and OPGW would vary depending on the Segment in which work is being performed. Wire stringing activities would be performed in accordance with SCE common practices and similar to process methods detailed in the Institute of Electrical and Electronics Engineers Standard 524-2003, Guide to the Installation of Overhead Transmission Line Conductors. The activities listed below by segment may be performed in an order different than presented, and may be performed more than once along a given segment depending upon the construction sequencing chosen.

##### *3.5.5.2.1.1 Segment 1*

Above-ground conductor and OHGW would be removed and conductor and OPGW would be installed in Segment 1 (where the existing structures are double-circuit, new structures would be single-circuit) in the following steps:

1. Planning – Develop a wire stringing plan to determine the sequence of wire pulls and the locations of pull-and-tension/stringing sites.
2. Establish pull-and-tension/stringing sites – Pull-and-tension/stringing sites would be established and wire pulling equipment would be set-up within the sites. At one end of a wire pull, a puller would be set-up; at the other end of a wire pull, a tensioner with wire reel stand truck would be set-up.
3. Guard structures would be installed at all electrical structures and roads where required.

4. De-energize circuit – The subtransmission circuit on one side of the existing structures would be deenergized.
5. Stringing sheaves (rollers or travelers) would be installed on the side of the existing structures where the de-energized circuit is located.
6. The existing conductor would be transferred to the stringing sheaves.
7. Roads would be closed, and traffic would be stopped where necessary.
8. Safety devices such as traveling grounds and radio-equipped public safety roving vehicles and linemen would be placed along the wire pull. Guard structures would be installed at all electrical structures and roads where required.
9. The existing conductor would be pulled through the stringing sheaves and spooled on wire reels sited in a pull-and-tension/stringing site. A conductor pulling rope/cable attached to the end of the conductor would allow tension on the conductor being removed to be maintained. Following the removal of the conductor, the rope/cable would be removed from the old conductor and would be used to pull in the new conductor (see Step 13 below).
10. Roads would be opened, and traffic flow allowed to resume.
11. Pole/tower installation – Replacement single-circuit structures would be installed.
12. Stringing sheaves would be installed on the replacement structures and structures to be reused.
13. A sock line (or the rope/cable described above) would be threaded through the stringing sheaves. A bucket truck is typically used to install the lightweight sock line from structure to structure. The sock line would be threaded through the roller to engage a camlock device that would secure the pulling sock in the roller. This threading process would continue between all structures through the rollers of a set of spans selected for a conductor pull. In areas where a bucket truck is unable to install a lightweight sock line, a helicopter would fly the lightweight sock line from structure to structure. Alternatively, a helicopter may be used to install the sock line for the entire length of the pull section. Roads would be closed, and traffic would be stopped where sock line threading occurs over a public roadway.
14. Roads would be closed, and traffic would be stopped where necessary.
15. Conductor/OPGW installation – Replacement conductor and OPGW would be installed on the replacement and reused structures. The sock line would be used to pull in the conductor pulling rope and/or cable. The pulling rope or cable would be attached to the conductor using a swivel joint to prevent damage to the wire and to allow the wire to rotate freely to prevent complications from twisting as the conductor unwinds off the reel. Once the conductor is pulled in, if necessary, all mid-span splicing would be performed. Once the splicing has been completed, the conductor would be sagged to proper tension and dead-ended to structures. After the conductor is dead-ended, the conductors would be secured to all tangent structures in a process called clipping-in.
16. Energize /deenergize circuits – The newly-installed circuit on replacement and reused structures would be energized, and the remaining existing circuit on the existing structures would be deenergized.
17. Conductor removal – The remaining deenergized subtransmission conductors on the existing structures would be removed as described above.
18. Existing structure removal – Existing structures would be removed.
19. Restoration – Areas would be restored/revegetated as appropriate.

#### *3.5.5.2.1.2 Segment 2*

Above-ground conductor would be removed and conductor and OPGW would be installed in Segment 2 (where the existing structures are single-circuit) in the following steps:

1. Planning – Develop a wire stringing plan to determine the sequence of wire pulls and the locations of pull-and-tension/stringing sites.
2. Establish pull-and-tension/stringing sites – Pull-and-tension/stringing sites would be established and wire pulling equipment would be set-up within the sites. At one end of a wire pull, a puller would be set-up; at the other end of a wire pull, a tensioner with wire reel stand truck would be set-up.
3. Guard structures and temporary poles would be installed. Guard structures would be installed at all electrical structures and roads where required.
4. De-energize circuit – The subtransmission circuit would be deenergized.
5. Stringing sheaves (rollers or travelers) would be installed on the existing structures.
6. The existing conductor would be transferred to the stringing sheaves.
7. Roads would be closed, and traffic would be stopped where necessary.
8. Safety devices such as traveling grounds, guard structures, radio-equipped public safety roving vehicles and linemen would be placed along the wire pull. Guard structures would be installed at all electrical structures and roads where required.
9. The existing conductor would be pulled through the stringing sheaves and spooled on wire reels sited in a pull-and-tension/stringing site. A conductor pulling rope/cable attached to the end of the conductor would allow tension on the conductor being removed to be maintained.
10. Roads would be opened, and traffic flow allowed to resume.
11. Existing structure removal – Existing structures would be removed.
12. Pole/tower installation – Replacement single-circuit structures would be installed.
13. Stringing sheaves would be installed on the replacement and reused structures.
14. A sock line would be threaded through the stringing sheaves. A bucket truck is typically used to install the lightweight sock line from structure to structure. The sock line would be threaded through the roller to engage a camlock device that would secure the pulling sock in the roller. This threading process would continue between all structures through the rollers of a set of spans selected for a conductor pull. In areas where a bucket truck is unable to install a lightweight sock line, a helicopter would fly the lightweight sock line from structure to structure. Roads would be closed, and traffic would be stopped where sock line threading occurs over a public roadway.
15. Roads would be closed, and traffic would be stopped where necessary.
16. Conductor/OPGW installation – Replacement conductor and OPGW would be installed on the replacement structures. The sock line would be used to pull in the conductor pulling rope and/or cable. The pulling rope or cable would be attached to the conductor using a special swivel joint to prevent damage to the wire and to allow the wire to rotate freely to prevent complications from twisting as the conductor unwinds off the reel. Once the conductor is pulled in, if necessary, all mid-span splicing would be performed. Once the splicing has been completed, the conductor would be sagged to proper tension and dead-ended to structures. After the conductor is dead-ended, the conductors would be secured to all tangent structures in a process called clipping-in.
17. Energize circuit – The newly-installed circuit on replacement structures would be energized.
18. Restoration – Areas would be restored/revegetated as appropriate.

###### *3.5.5.2.1.3 Segment 3*

Above-ground conductor would be removed and conductor and OPGW would be installed in Segment 3 (where the existing structures are double-circuit) in the following steps:

1. Planning – Develop a wire stringing plan to determine the sequence of wire pulls and the locations of pull-and-tension/stringing sites.
2. Establish pull-and-tension/stringing sites – Pull-and-tension/stringing sites would be established and wire pulling equipment would be set-up within the sites. At one end of a wire pull, a puller would be set-up; at the other end of a wire pull, a tensioner with wire reel stand truck would be set-up.
3. Guard structures and temporary poles would be installed. Guard structures would be installed at all electrical structures and roads where required.
4. De-energize circuits – The subtransmission circuits would be deenergized.
5. Stringing sheaves (rollers or travelers) would be installed on the existing structures.
6. The existing conductor would be transferred to the stringing sheaves.
7. Roads would be closed, and traffic would be stopped where necessary.
8. Safety devices such as traveling grounds, guard structures, radio-equipped public safety roving vehicles and linemen would be placed along the wire pull. Guard structures would be installed at all electrical structures and roads where required.
9. The existing conductor would be pulled through the stringing sheaves and spooled on wire reels sited in a pull-and-tension/stringing site. A conductor pulling rope/cable attached to the end of the conductor would allow tension on the conductor being removed to be maintained.
10. Roads would be opened, and traffic flow allowed to resume.
11. Existing structure removal – Existing structures would be removed.
12. Pole/tower installation – Replacement double-circuit structures would be installed.
13. Stringing sheaves would be installed on the replacement and reused structures.
14. A sock line would be threaded through the stringing sheaves. A bucket truck is typically used to install the lightweight sock line from structure to structure. The sock line would be threaded through the roller to engage a camlock device that would secure the pulling sock in the roller. This threading process would continue between all structures through the rollers of a set of spans selected for a conductor pull. In areas where a bucket truck is unable to install a lightweight sock line, a helicopter would fly the lightweight sock line from structure to structure. Roads would be closed, and traffic would be stopped where sock line threading occurs over a public roadway.
15. Roads would be closed, and traffic would be stopped where necessary.
16. Conductor/OPGW installation – Replacement conductor and OPGW would be installed on the replacement and reused structures. The sock line would be used to pull in the conductor pulling rope and/or cable. The pulling rope or cable would be attached to the conductor using a swivel joint to prevent damage to the wire and to allow the wire to rotate freely to prevent complications from twisting as the conductor unwinds off the reel. Once the conductor is pulled in, if necessary, all mid-span splicing would be performed. Once the splicing has been completed, the conductor would be sagged to proper tension and dead-ended to structures. After the conductor is dead-ended, the conductors would be secured to all tangent structures in a process called clipping-in.
17. Energize circuit – The newly-installed circuit on replacement structures would be energized.
18. Restoration – Areas would be restored/revegetated as appropriate.

*3.5.5.2.1.4 Segment 4*

Above-ground conductor would be removed and conductor and OPGW would be installed in Segment 4 (where the existing structures are single-circuit) in the following steps:

1. Planning – Develop a wire stringing plan to determine the sequence of wire pulls and the locations of pull-and-tension/stringing sites.
2. Establish pull-and-tension/stringing sites – Pull-and-tension/stringing sites would be established and wire pulling equipment would be set-up within the sites. At one end of a wire pull, a puller would be set-up; at the other end of a wire pull, a tensioner with wire reel stand truck would be set-up.
3. Guard structures would be installed. Guard structures would be installed at all electrical structures and roads where required.
4. De-energize circuit – The subtransmission circuit would be deenergized.
5. Stringing sheaves (rollers or travelers) would be installed on the existing structures.
6. The existing conductor would be transferred to the stringing sheaves.
7. Roads would be closed, and traffic would be stopped where necessary.
8. Safety devices such as traveling grounds, guard structures, radio-equipped public safety roving vehicles and linemen would be placed along the wire pull. Guard structures would be installed at all electrical structures and roads where required.
9. The existing conductor would be pulled through the stringing sheaves and spooled on wire reels sited in a pull-and-tension/stringing site. A lightweight sock line attached to the end of the conductor would allow tension on the conductor being removed to be maintained.
10. Roads would be opened, and traffic flow allowed to resume.
11. Existing structure removal – Existing structures would be removed.
12. Pole/tower installation – Replacement single-circuit structures would be installed.
13. Stringing sheaves would be installed on the replacement and reused structures.
14. A sock line would be threaded through the stringing sheaves. A bucket truck is typically used to install the lightweight sock line from structure to structure. The sock line would be threaded through the roller to engage a camlock device that would secure the pulling sock in the roller. This threading process would continue between all structures through the rollers of a set of spans selected for a conductor pull. In areas where a bucket truck is unable to install a lightweight sock line, a helicopter would fly the lightweight sock line from structure to structure. Roads would be closed, and traffic would be stopped where sock line threading occurs over a public roadway.
15. Roads would be closed, and traffic would be stopped where necessary.
16. Conductor/OPGW installation – Replacement conductor and OPGW would be installed on the replacement and reused structures. The sock line would be used to pull in the conductor pulling rope and/or cable. The pulling rope or cable would be attached to the conductor using a swivel joint to prevent damage to the wire and to allow the wire to rotate freely to prevent complications from twisting as the conductor unwinds off the reel. Once the conductor is pulled in, if necessary, all mid-span splicing would be performed. Once the splicing has been completed, the conductor would be sagged to proper tension and dead-ended to structures. After the conductor is dead-ended, the conductors would be secured to all tangent structures in a process called clipping-in.
17. Energize circuit – The newly-installed circuit on replacement structures would be energized.
18. Restoration – Areas would be restored/revegetated as appropriate.

###### *3.5.5.2.1.5 Segment 5*

Work in Segment 5 would be performed as follows.

1. De-energize circuit – The subtransmission circuit would be deenergized.
2. Pole replacement – Replacement single-circuit poles would be installed.
3. The existing conductor and other overhead cables would be transferred to the replacement poles.
4. Re-energize circuit – The subtransmission circuit would be re-energized.
5. Establish pull-and-tension/stringing sites – Pull-and-tension/stringing sites would be established and wire pulling equipment would be set-up within the sites. At one end of a wire pull, a puller would be set-up; at the other end of a wire pull, a tensioner with wire reel stand truck would be set-up.
6. Guard structures would be installed. Guard structures would be installed at all electrical structures and roads where required.
7. Stringing sheaves would be installed on the replacement and reused structures.
8. A sock line would be threaded through the stringing sheaves. A bucket truck is typically used to install the lightweight sock line from structure to structure. The sock line would be threaded through the roller to engage a camlock device that would secure the pulling sock in the roller. This threading process would continue between all structures through the rollers of a set of spans selected for a conductor pull. Roads would be closed, and traffic would be stopped where sock line threading occurs over a public roadway.
9. Roads would be closed, and traffic would be stopped where necessary.
10. ADSS cable installation – ADSS cable would be installed on the replacement and existing poles. The sock line would be used to pull in the pulling rope and/or cable. The pulling rope or cable would be attached to the ADSS cable using a swivel joint to prevent damage to the wire and to allow the wire to rotate freely to prevent complications from twisting as the ADSS cable unwinds off the reel. Once the ADSS cable is pulled in, it would be sagged to proper tension and dead-ended to structures. After the ADSS cable is dead-ended, the cable would be secured to all tangent poles.
11. Restoration – Areas would be restored/revegetated as appropriate.

#### 3.5.5.2.2 Conductor and Optical Groundwire Installation: Activity Locations

Conductor and OPGW installation activities would occur in those portions of the GKR Project alignment so-identified in Appendix A. Conductor and OPGW stringing and installation activities would occur at every pull-and-tension/stringing site, at every existing structure that would be removed, at every existing structure that would be modified, and at every newly-installed structure. Figure 3.5-2 provides a diagram of a typical pull-and-tension/stringing site.

#### 3.5.5.2.3 Conductor and Optical Groundwire Installation: Diagram of the General Sequencing and Equipment Used

A diagram of the general equipment that would be used during the conductor and OPGW installation process is presented in Figure 3.5-2.

#### 3.5.5.2.4 Conductor/Cable Splicing Process

##### *3.5.5.2.4.1 Conductor*

Conductor will be spliced using compression splices applied per manufacturer's instructions and specifications.

##### *3.5.5.2.4.2 OPGW Installation*

OPGW splicing includes the splicing of the inner optic fibers within the OPGW. The splice between two lengths of OPGW is contained within a splice box mounted on a subtransmission structure.

#### 3.5.5.2.5 Conductor and Optical Groundwire Installation: Pull-and-Tension/Stringing Site Locations

The average distance between pull-and-tension/stringing sites along the GKR Project alignment is 1.75 miles, with distances between any two pull-and-tension/stringing sites ranging from 150 feet to 20,590 feet. The dimensions of each pull-and-tension site/stringing site would be approximately 150 feet by 400 feet. Pull-and-tension/stringing sites may be located at existing dead-end structures, at points of inflection in the transmission line alignment, and according to the capacity of conductor reels. Generally, pull-and-tension/stringing sites would be in direct line with the direction of the overhead conductors being installed and established at a distance equal to approximately three times the height of the adjacent structure. The equipment that would be required at pull-and-tension/stringing sites includes a puller set-up positioned in a pull-and-tension/stringing site located at one end of a wire pull, and a tensioner set-up with wire reel stand truck positioned in a pull-and-tension/stringing site at the other end of a wire pull. The pull-and-tension/stringing sites used for conductor installation would also be used for OPGW installation.

#### 3.5.5.2.6 Conductor and Optical Groundwire Installation: Underground Installation

No conductor or OPGW would be installed underground under the GKR Project. Fiber optic cable would be installed underground at and in the vicinity of the existing Banducci, Gorman, and Kern River 1 Hydroelectric substations as described elsewhere.

#### 3.5.5.2.7 Conductor and Optical Groundwire Installation: Safety Precautions

Where conductor, OHGW, or OPGW are to be removed or installed across a public roadway or a railroad, SCE would install guard structures on either side of the roadway or railroad, or would make alternate arrangements as described in Section 3.5.5.4 below. Guard structures would be installed at all electrical structures and roads where required.

### *3.5.5.3 Telecommunications*

OPGW would be installed along Segments 1, 2, 3, and 4. Overhead OPGW installed on replacement and reused structures would be installed simultaneously with conductor and as described above. ADSS fiber optic cable would be installed along Segment 5. Overhead ADSS fiber optic cable would be installed as described for conductor above.

Short sections of fiber optic cable would be installed underground at and adjacent to the existing Banducci, Gorman, and Kern River 1 Hydroelectric substations (Figureset 3.5-3). OPGW would transition from an overhead configuration to an underground configuration through risers installed on replacement or existing poles (known as getaway poles). The approximate length of undergrounding at each of the substations is shown in the 'Excavations and Associated Equipment Work Areas' line item in Table 3.5-3.

Where existing conduit or cable raceways within and adjacent to the substations are available, underground fiber optic cable would be installed in these structures. If existing conduit or raceways are not available within the substation, new conduit would be installed in trenches. New conduit would also be installed in trenches between the getaway pole(s) and the MEERs/telecommunications rooms/telecommunications cabinets within each substation. Conduit trenches would be approximately 12 inches wide and 36 inches deep. New underground conduit and structures would typically be installed with a backhoe. Polyvinyl chloride conduit would be placed in the trench and covered with a minimum of approximately 30 inches of concrete slurry, then backfilled and compacted (Figure 3.3-1). The fiber optic cable would be installed in an innerduct that protects and identifies the cable within the underground conduit and structures. To install the innerduct, it would first be pulled in the conduit using a pull rope and pulling machine or truck-mounted hydraulic capstan. Then the fiber optic cable would be pulled inside the innerduct using the same procedure.

Undergrounding would require excavation for installation of vaults or pull boxes at each end of the underground conduit (Figure 3.5-4). For each vault or pull box, a hole is excavated approximately 8 feet deep by approximately 6 feet long by approximately 6 feet wide. The vault or pull box would be lowered into place, connected to the conduits, and the hole would be backfilled with concrete slurry. One or more splice boxes would also be required on each getaway pole. SCE would install the fiber optic cable at the vaults and pull boxes and splice the cable segments, where it would transition from underground to overhead.

Approximately three vaults or pull boxes would be installed under the GKR Project at or in the vicinity of the existing Gorman and Kern River 1 Hydroelectric substations, resulting in the excavation of approximately 900 cubic feet of material. An additional approximately 1,800 cubic feet of material may be excavated for installation of underground fiber optic cable at or in the vicinity of the existing substations. Excavated material would be managed as described in Section 3.5.1.4. Fiber optic cable is anticipated to be installed in existing underground facilities at the existing Banducci Substation.

#### *3.5.5.4 Guard Structures*

Guard structures are temporary facilities that would typically be installed at transportation, flood control, and utility crossings prior to conductor, OHGW/OPGW/ADSS fiber optic cable removal or installation activities. Guard structures would be installed at all electrical structures and roads where required. These structures are designed to stop the movement of a conductor or OHGW/OPGW/ADSS fiber optic cable should it momentarily drop below a conventional stringing height. SCE estimates that guard structures may need to be installed at 194 locations along the GKR Project alignment.

Typical guard structures are standard wood poles with diameters of 12 to 18 inches at the base and burial depths of 5 to 7 feet. Depending on the overall spacing of the conductors being installed, approximately three to five guard poles would be required on either side of a crossing. Guard structure wood poles would be installed using a direct-buried approach. Direct-buried wood poles would require a hole to be excavated using either an auger or a backhoe, or with the use of hydraulic or pneumatic equipment (such as jackhammers, drills, etc.). In some locations, corrugated steel or plastic forms may be placed to stabilize the excavation walls prior to installation of the pole.

Following excavation of the pole hole, the wood pole would then be installed in the excavated or augured holes, typically by a line truck with an attached boom; the base would be secured by backfilling with the excavated material the interstitial space between the wall of the excavated or augured hole and the pole.

In some cases, the wood poles could be substituted with the use of specifically equipped boom trucks or, at highway crossings, temporary netting could be installed if required. The guard structures would be removed after the conductor is secured into place.

For crossings of highways, SCE would work closely with the applicable agency to secure the necessary permits to string conductor over the applicable infrastructure.

#### *3.5.5.5 Blasting*

Blasting is not anticipated to be required to construct the GKR Project.

### 3.5.6 Transmission Line Construction (Below Ground)

No subtransmission infrastructure would be installed below ground as part of the GKR Project.

#### *3.5.6.1 Trenching*

No below ground subtransmission line construction is included under the GKR Project.

#### *3.5.6.2 Trenchless Techniques (Microtunnel, Jack and Bore, Horizontal Directional Drilling)*

No below ground subtransmission line construction is included under the GKR Project.

### 3.5.7 Substation, Switching Stations, Gas Compressor Stations

No switching stations or gas compressor stations are included as part of the GKR Project.

#### *3.5.7.1 Installation or Facility Modification*

##### 3.5.7.1.1 Transformers/Electric Components

At the existing Gorman and Kern River 1 Hydroelectric substations, existing conductor would be removed from the existing subtransmission racks, and new conductor would be connected to the existing racks. Minor modifications to the existing racks at each of the substations may be required so that OHGW can be installed between the racks and the getaway structures. These minor modifications could include installation of new fittings to which the OHGW would be attached, or structural reinforcement of the existing racks.

##### 3.5.7.1.2 Gas Components

No gas components would be installed or modified under the GKR Project.

##### 3.5.7.1.3 Control and Operation Buildings

No control and operation buildings would be constructed or modified under the GKR Project.

##### 3.5.7.1.4 Driveways

No driveways would be constructed or modified under the GKR Project.

##### 3.5.7.1.5 Fences

No fences would be constructed or modified under the GKR Project.

##### 3.5.7.1.6 Gates

No gates would be installed or modified under the GKR Project.

#### 3.5.7.1.7 Communication Systems (SCADA)

Within the existing Banducci, Gorman, and Kern River 1 Hydroelectric substations, SCE would install new terminal equipment, channel multiplexer equipment, equipment cabling, and other telecommunication equipment devices within the existing control buildings/MEERs. This work would provide the required telecommunication circuit connection for subtransmission line protection relay equipment within the substations. This work will occur generally within the substation fence line on previously disturbed surfaces. SCE will also install cabling between the dead-end rack to the existing control rooms/MEERs at each of the substations and would install new relay and protection racks in those facilities.

#### 3.5.7.1.8 Grounding Systems

No grounding systems would be installed or modified under the GKR Project; the OPGW would be connected to the ground grid at each of the existing Banducci, Gorman, and Kern River 1 Hydroelectric substations. The OPGW would also be grounded along the subtransmission alignment.

### *3.5.7.2 Civil Works*

No slope stabilization, drainage, retention basins, or spill containment facilities would be constructed at any substation under the GKR Project.

## 3.5.8 Gas Pipelines

No gas pipelines are included as part of the GKR Project.

## 3.5.9 Gas Storage Facilities

No gas storage facilities are included as part of the GKR Project.

## 3.5.10 Public Safety and Traffic Control

### *3.5.10.1 Public Safety*

#### 3.5.10.1.1 Public Safety Considerations

The GKR Project will pose few public safety considerations. This is a function of the routine construction activities proposed under the GKR Project; that much of the GKR Project alignment traverses lands that are agricultural or privately-owned open space (and thus generally not open to the public); and that the population density along the GKR Project is low and generally non-urbanized.

Public safety considerations during construction could include: ramifications from spills of fuels or hazardous materials; work being performed along public roadways; movement of additional construction equipment along public roadways; use of helicopters; ramifications from construction-sourced wildfire; and direct effects from deenergized conductor being dropped on personal property during wire stringing activities. A number of measures will be implemented during the GKR Project to address these public safety considerations; these are described throughout Chapter 5, and they include, for example:

- Development and implementation of one or more SWPPPs to ensure, in part, that fuels and hazardous materials are used and handled according to applicable regulations, and to ensure efficient and effective response to spills
- Development and implementation, if necessary, of a spill prevention, control, and countermeasures plan to ensure that fuels are stored appropriately and to ensure efficient and effective response to spills

- Development and implementation of a Hazardous Materials Management Plan (HMMP) to ensure that materials are managed according to applicable regulations
- Development and implementation of a Traffic Control/Management Plan, as may be required under a ministerial permit, to mitigate public safety impacts from construction along public roadways and to ameliorate potential impacts from the movement of construction equipment along public roadways
- Development and implementation of a Helicopter Use and Safety Plan to address use of helicopters in areas where the public are present
- Development and implementation of a Construction Fire Prevention Plan to mitigate the risk of construction activities triggering a wildfire
- Installation of guard structures or use of specially equipped trucks during wire stringing activities where public roadways are crossed by the project alignment. Guard structures would be installed at all electrical structures and roads where required

#### 3.5.10.1.2 Procedures for Managing Work Sites in Urban Areas

Approximately 1 linear mile of Segment 1 is located within the Arvin Urban Cluster; the public safety practices and measures employed across the GKR Project alignment will be employed in this urban area.

#### 3.5.10.1.3 Public Access Restrictions

To ensure public safety during construction of the GKR Project, the public would be restricted from entering or transiting construction work areas and staging areas, and would also be excluded from those areas of the alignment where overhead cable removal or installation activities are underway. Public access restrictions would be maintained during the duration of construction activities at a given location.

### *3.5.10.2 Traffic Control*

#### 3.5.10.2.1 Traffic Control Procedures

During construction, SCE will implement APM TRA-1 (see Section 3.11). SCE would follow its standard safety practices, including installing appropriate traffic control devices between work zones and transportation facilities, posting adequate signs, and using proper construction techniques. SCE will follow the recommendations in the California Temporary Traffic Control Handbook regarding basic standards for the safe movement of traffic on highways and streets in accordance with Section 21400 of the California Vehicle Code.

#### 3.5.10.2.2 Location, Process, and Timing for Closing Sidewalks, Lanes, Roads, Trails, Paths, or Driveways

The locations, process, and timing for the closing of sidewalks, lanes, roads, trails, paths, or driveways to manage public access is presented in Section 5.17, Transportation. Overhead cable removal and installation activities would require the temporary closures or roads, lanes of roads (if the entire road does not need to be closed), and associated sidewalks or pedestrian paths. SCE would obtain encroachment permits from the local jurisdictions and Caltrans, as appropriate, for lane or roadway closures. Closures of private driveways would be coordinated with the individual landowners.

The GKR Project alignment crosses recreational paths and trails; the locations of these paths and trails are presented in Section 5.16. SCE would coordinate with the relevant jurisdiction to coordinate closure of paths and trails if necessary.

#### 3.5.10.2.3 Temporary Detour Routes

No temporary detour routes or locations would be necessary to facilitate construction of the GKR Project.

#### 3.5.10.2.4 Traffic Control Plan

A Traffic Control Plan for the GKR Project would be developed in support of ministerial encroachment permit applications, if any such permits are required and if such a Plan is required by the permitting jurisdiction.

### *3.5.10.3 Security*

Staging areas, as described above, would be fenced and may be illuminated for security purposes. Security personnel may either patrol the staging areas periodically or may be stationed at staging areas. Security at staging areas would be emplaced for the duration that a given staging area is in-use. Security measures will not be employed at construction work areas.

### *3.5.10.4 Livestock*

No livestock fencing or guards will be installed as part of the GKR Project to prevent livestock from entering project areas.

## 3.5.11 Dust, Erosion, and Runoff Controls

### *3.5.11.1 Dust*

During construction, migration of fugitive dust from the construction sites would be limited by control measures set forth by the Eastern Kern Air Pollution Control District (EKAPCD), San Joaquin Valley Air Pollution Control District (SJVAPCD), and the South Coast Air Quality Management District (SCAQMD). In addition, SCE would, at the direction of the CPUC, implement the following dust control measures as contained in the Air Quality-related CPUC Draft Environmental Measure:

- All exposed surfaces with the potential of dust-generating shall be watered or covered with coarse rock to reduce the potential for airborne dust from leaving the site.
- The simultaneous occurrence of more than two ground disturbing construction phases on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
- Cover all haul trucks entering/leaving the site and trim their loads as necessary.
- Use wet power vacuum street sweepers to sweep all paved access road, parking areas, staging areas, and public roads adjacent to project sites on a daily basis (at minimum) during construction. The use of dry power sweeping is prohibited.
- Apply gravel or non-toxic soil stabilizers on all unpaved parking areas and staging areas.
- Water and/or cover soil stockpiles daily.
- All vehicle speeds shall be limited to 15 miles per hour (mph) or less on unpaved areas.
- Implement dust monitoring in compliance with the standards of the local air district.
- Halt construction during any periods when wind speeds are in excess of 50 mph.

### *3.5.11.2 Erosion*

The following BMPs may be implemented to manage erosion:

- EC-1, Scheduling. The construction team shall reduce the discharge of pollutants to storm drain facilities caused by construction activities by scheduling activities in a manner that will limit exposure of disturbed soils to wind, rain, non-storm water run-off and storm water run-on and run-off.
- EC-2, Preservation of Existing Vegetation. The construction team will protect and preserve existing vegetation in work areas as long as practicable before disturbing them. The construction team shall also preserve and protect existing vegetation adjacent to work areas. This protection and preservation of such vegetation will serve to control erosion and filter out sediment.
- EC-3, Hydraulic Mulch. The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity.
- EC-4, Hydroseeding. The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity.
- EC-5, Soil Binders. The construction team will implement this BMP, if necessary, to disturbed soil areas requiring short term temporary protection. Because soil binders can often be incorporated into the work, they are a good alternative to mulches in areas where grading activities will soon resume. Soil binders are also suitable for use on stockpiles. Non-toxic soil binders, equivalent or better in efficiencies than the CARB-approved soil binders, shall be applied per the manufacturer recommendations to active unpaved roadways, unpaved staging areas, and unpaved parking area(s) throughout construction to reduce fugitive dust emissions. Soil binders will be non-toxic and MSDS will be present at site.
- EC-6, Straw Mulch. The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity. Straw mulch will be certified weed free.
- EC-7, Geotextiles and Mats. The construction team will implement one or more of these measures to stabilize disturbed soil areas (stockpiles, slopes, embankments, conveyances, etc.) and protect these soils from erosion by rain, wind or storm water run-on and run-off where applicable to reduce soil erosion from wind and rain. Plastic micro-filament matting will not be used, only natural fiber mats to prevent trapping of birds and reptiles.
- EC-8, Wood Mulch. The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity. Wood mulch shall be untreated.
- EC-15, Soil Preparation and Roughening. The construction team will implement this BMP to assess and prepare surface soils for other BMP installation. This can include soil testing (for seed base, soil characteristics, or nutrients), as well as roughening surface soils by mechanical methods (including sheepsfoot rolling, track walking, scarifying, stair stepping, and imprinting) to prepare soil for additional BMPs, or to break up sheet flow. Soil preparation can also involve tilling topsoil to prepare a seed bed and/or incorporation of soil amendments, to enhance vegetative establishment.
- EC-16, Non-Vegetative Stabilization. The construction team will utilize non-vegetative stabilization methods for temporary or permanent stabilization of areas prone to erosion; this would be used only where vegetative options are not feasible.

- WE-1, Wind Erosion Control. The construction team will apply water or other chemical dust suppressants as necessary to prevent or alleviate dust nuisance generated by construction activities. Covering small stockpiles or areas is an alternative to applying water or other dust palliatives.

#### *3.5.11.3 Runoff*

The following BMPs may be implemented to manage storm water runoff and sediment:

- SE-4, Check Dam. The construction team will implement this BMP to reduce scour and channel erosion by reducing flow velocity and increasing residence time within the channel, allowing sediment to settle.
- SE-5, Fiber Rolls. The construction team will implement this BMP to eliminate the erosion of slopes. The rolls are widely used to prevent sediment from running off site.
- SE-6, Gravel Bag Berm. The construction team will implement this BMP to eliminate erosion of slopes. This BMP is particularly useful with steep slopes and a high potential for runoff.
- SE-7, Street Sweeping and Vacuuming. The construction team will implement this BMP when soils and miscellaneous debris are tracked from the construction site to areas outside the site. This measure prevents sediments from reaching the drop inlets and stormwater system, and prevents unsafe driving conditions.
- SE-10, Storm Drain Inlet Protection. The construction team will implement this BMP if any runoff from the construction site drains directly into a drop inlet. The protection will prevent debris and soils from clogging drop inlets and storm drain systems.
- TC-1, Stabilized Construction. The construction team will implement this BMP to remove all construction site soil and miscellaneous debris prior to leaving the site. The BMP will depend on the soil, site, and type of surface outside the yard.
- TC-2, Stabilized Construction Roadway. A stabilized construction roadway is a temporary access road. It is designed for the control of dust and erosion created by vehicular tracking.
- WM-3, Stockpile Management. The construction team will implement this BMP whenever there are stockpiles of asphalt, concrete, wood, or soil. This includes temporary stockpiles and stockpiles existing for periods longer than one working day.

### 3.5.12 Water Use and Dewatering

#### *3.5.12.1 Water Use*

Construction of the GKR Project is estimated to require approximately 350 acre-feet of water; this water would be consumed over the 2-year construction duration. Water would be used for dust control, for restoration activities, and in the construction of TSP foundations.

SCE would preferentially utilize recycled or reclaimed water if and when such water is available; at this time, the volume of recycled or reclaimed water available that would be available for purchase is unknown. However, if the full volume of water needed for the GKR Project is available for purchase at competitive rates, SCE would solely utilize recycled or reclaimed water for the GKR Project.

If recycled or reclaimed water is not available in sufficient quantities to supply the entirety of the GKR Project's water demand, SCE would purchase water from commercial purveyors to supplement the volumes of recycled or reclaimed water available. Given the nature of water resources in the GKR Project area, water purchased from commercial purveyors could be sourced from either surface water or groundwater resources.

### *3.5.12.2 Dewatering*

During installation of TSPs or LWS poles, shallow groundwater may be encountered. In these instances, excavations would be dewatered using one or more pumps and the water would be either discharged on-site to the surface (if so permitted) or would be stored in Baker tanks or similar equipment prior to disposal off-site; Baker tanks or similar equipment would be emplaced on the temporary work pad established for new structure installation. Dewatering water may also be used for dust control.

## 3.5.13 Hazardous Materials and Management

### *3.5.13.1 Hazardous Materials*

#### 3.5.13.1.1 Types, Uses, and Volumes

Construction of the GKR Project would require the limited use of hazardous materials, such as fuels, lubricants, and cleaning solvents. These would be used to power internal combustion engines, to lubricate internal combustion engines and other construction equipment and hardware, and for cleaning purposes. The estimated volumes of these materials that would be consumed or used during construction are presented in Table 3.5-5. Based on the anticipated volume of hazardous liquid materials, such as fuel, that would be stored and dispensed at one or more staging areas, a Spill Prevention, Control, and Countermeasure (SPCC) Plan could be required (in accordance with 40 Code of Federal Regulations [CFR] Parts 112.1-112.7) depending on contractor requirements.

**Table 3.5-5. Types, Uses and Volumes of Hazardous Materials**

| Hazardous Material Type | Use | Approximate Volume (gallons) |
|---|---|---|
| Diesel | Engine fuel | 386,486 |
| Gasoline | Engine fuel | 48,579 |
| Lubricants/Hydraulic Fluids | Engine and equipment lubrication/ Powering hydraulic equipment | 21,753 |
| Miscellaneous Construction Fluids (solvents, etc.) | Cleaning/lubricating hardware, etc. | 1,088 |

Notes:
Diesel and gasoline volumes developed through California Emissions Estimator Model® (CalEEMod)
Lubricants/hydraulic fluids consumption assumed at 5 percent of non-aviation fuel consumption.
Miscellaneous construction fluid volumes assumed at 5 percent of Lubricants/Hydraulic Fluids volume.

#### 3.5.13.1.2 Herbicides or Pesticides

No herbicides or pesticides are planned to be used during construction.

#### 3.5.13.1.3 Pre-Existing Hazardous Waste

If pre-existing hazardous waste is encountered during construction, it would be removed, managed, and disposed as described in the HMMP developed and implemented per APM HAZ-1 or as described in the Soil Management Plan developed and implemented per APM HAZ-2.

#### *3.5.13.2 Hazardous Materials Management*

##### **3.5.13.2.1 BMPs: Transporting, Storing, and Handling**

The following BMPs would be followed for transporting, storing, and handling hazardous materials:

- NS-9, Vehicle and Equipment Fueling. The construction team will implement this BMP when fueling of equipment occurs on site. The equipment should be monitored before and after fueling. This will prevent any fuel from reaching the construction site soils and possible groundwater. Diapers, pans or tarps will be used under fueling areas. Spill kits will be onsite at fueling locations. Fueling areas will be located at least 100 feet from drainages.
- WM-1, Material Delivery and Storage. The construction team will implement this BMP to prevent, reduce, or eliminate the discharge of pollutants from material delivery and storage to the stormwater system or watercourses by minimizing the storage of hazardous materials onsite, storing materials in watertight containers and/or a completely enclosed designated area, installing secondary containment, conducting regular inspections, and training employees and subcontractors.
- WM-2, Material Use. The construction team will implement this BMP to prevent or reduce the discharge of pollutants to the storm drain system or watercourses from material use by using alternative products, minimizing hazardous material use onsite, and training employees and subcontractors.
- WM-4, Spill Prevention and Control. The construction team will implement this BMP to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

##### **3.5.13.2.2 BMPs: Incidental Leak or Spill**

The following BMPs would be followed in the event of an incidental leak or spill of hazardous materials:

- WM-4, Spill Prevention and Control. The construction team will implement this BMP to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.
- WM-6, Hazardous Waste Management. The construction team will implement this BMP to prevent or reduce the discharge of pollutants to stormwater from hazardous waste through proper material use, waste disposal, and training of employees and subcontractors.
- WM-7, Contaminated Soil Management. The construction team will implement this BMP to prevent or reduce the discharge of pollutants to stormwater from contaminated soil and highly acidic or alkaline soils by conducting pre-construction surveys, inspecting excavations regularly, and remediating contaminated soil promptly.

##### **3.5.13.2.3 Hazardous Substance Control and Emergency Response Plan / Hazardous Waste and Spill Prevention Plan**

Hazardous materials management during construction of the GKR Project would be guided by an HMMP, which would be developed prior to construction as specified in APM HAZ-1 (see Section 3.11).

### 3.5.14 Waste Generation and Management

#### *3.5.14.1 Solid Waste*

##### 3.5.14.1.1 Solid Waste Streams

Construction of the GKR Project would result in generation of various solid wastes including metals (from the removed LSTs, conductor, OHGW, and associated fittings), wood poles, wood pallets, cardboards/papers (e.g., from material packaging), worker-generated solid waste (e.g., food and food packaging), and organic waste (e.g., removed vegetation).

##### 3.5.14.1.2 Solid Waste Management

Solid waste generated during construction of the GKR Project would be collected at the point of creation, transported to a staging area, and then temporarily stored at a staging area as the solid waste awaits salvage, recycling, and/or disposal. Solid wastes would be sorted, and recyclable and non-recyclable materials would be stored separately at the staging areas. No treatment of solid wastes would occur at any GKR Project construction work area or staging area. Solid wastes would be transported off-site using SCE-approved transporters and disposed of at one or more SCE-approved disposal facilities or at an industrial-scale recycling facility. Organic waste would be removed from the GKR Project alignment and disposed off-site.

##### 3.5.14.1.3 Estimated Total Volumes

SCE takes the construction of the GKR Project to be a single construction activity. Given the physical characteristics of the solid waste to be generated by the GKR Project, estimates of mass and not volume are presented throughout this PEA document. SCE estimates that the entire mass of the removed LSTs, conductor and OHGW would be recycled. SCE further estimates that, at a minimum, three-quarters of the mass of hardware and fittings and miscellaneous solid waste would be recycled.

Approximately 900 tons of metal, consisting of 400 tons of steel from existing towers, 36 tons of hardware, 462 tons of metals from subtransmission conductor, and 2.5 tons of OHGW would be removed as part of the GKR Project, as would approximately 210 tons of concrete from the foundations of existing towers. The mass of miscellaneous solid waste (such as pallets, packaging, etc.) would be approximately 10 tons.[13]

##### 3.5.14.1.4 Recycling Potential

Given the very large mass and recyclable content of the waste streams that would be generated during construction of the GKR Project, it is anticipated that the steel from the removed LSTs, conductor, OHGW, and steel hardware and fittings would be transported to industrial-scale recycling facilities.

##### 3.5.14.1.5 Locations of Appropriate Disposal and Recycling Facilities

The final disposition site of recyclable materials is not known at this time as the selection of such site may depend upon market conditions at the time of construction. Appropriate disposal facilities for non-metallic recyclable materials and non-recyclable materials are available at the Bena Landfill near Bakersfield and the Tehachapi Sanitary Landfill.

---

[13] This assumes a mass of 2,000 pounds per LST removed, 654 pounds/1,000 feet for conductor; 450 pounds/1,000 feet for OHGW; and 100 pounds of hardware and fittings and 50 pounds of miscellaneous solid waste per existing structure on which new conductor would be installed. Assumes 2 tons per wood pole removed.

### 3.5.14.2 Liquid Waste

#### 3.5.14.2.1 Liquid Waste Streams

Sanitary waste is the only liquid waste planned to be generated during construction of the GKR Project. No other liquid wastes (e.g., drilling muds, contaminated waters) are expected to be generated by the GKR Project.

#### 3.5.14.2.2 Liquid Waste Management

Portable toilets would be provided for on-site use by construction workers; sanitary waste would be collected, contained, and stored in these portable toilets prior to disposal by a licensed sanitation contractor. Sanitary waste would be treated at a wastewater treatment plant.

#### 3.5.14.2.3 Estimated Volumes

The volumes of liquid waste generated across the GKR Project alignment would be commensurate with the number of workers on site during construction (i.e., a maximum of approximately 85 workers). It is estimated that approximately 25,000 gallons of liquid waste would be generated during construction of the GKR Project.[14]

#### 3.5.14.2.4 Locations of Appropriate Disposal Facilities

It is anticipated that sanitary waste would be transported to, and treated at, one of the numerous wastewater treatment facilities located in and near Bakersfield and Tehachapi.

### 3.5.14.3 Hazardous Waste

#### 3.5.14.3.1 Potentially Hazardous Waste Streams and Management

Only small volumes of hazardous waste are anticipated to be generated during construction of the GKR Project. These hazardous wastes would generally include empty fuel, lubricant, or cleaning solvent containers and materials contaminated with fuels, lubricants, or cleaning solvents (rags, drip pans, etc.). A low potential exists for contaminated soil or groundwater to be encountered during excavation or other ground-disturbing activities.

The existing wood poles or portions of wood poles removed for the GKR Project would be returned to a staging area, and either reused by SCE, returned to the manufacturer, disposed of in a Class I hazardous waste landfill, and/or disposed of in the lined portion of a RWQCB-certified landfill. Approximately 149 wood poles (accounting for approximately 69 H-frames, three 3-pole installations, and 2 single poles), weighing in total approximately 298 tons, would be removed and disposed under the GKR Project.

All hazardous waste would be stored, handled, and used in accordance with applicable regulations. SCE crews and/or SCE's construction contractor would implement proper hazardous waste management activities, which would include preparation and implementation of a GKR Project-specific HMMP as specified in APM HAZ-1. The plan would include safety information regarding the transport, use, and disposal of hazardous waste. In addition, all transport, use, and disposal of hazardous waste would be in compliance with applicable laws, rules, and regulations.

To address contaminated soil or groundwater, SCE would develop and implement a Soil Management Plan per APM HAZ-2. The Plan would direct that, if encountered, contaminated soil would be segregated,

---

[14] Assume 2 liters (0.52 gallons) per construction worker per day; 85 workers; 6-day workweek; 24 month construction schedule.

sampled, and tested to determine appropriate disposal options. If the soil is classified as hazardous, it will be properly managed on location and transported in accordance with the U.S. Department of Transportation (USDOT) regulations using a Uniform Hazardous Waste Manifest to a Class I Landfill or other appropriate soil treatment or recycling facility, as approved by SCE. If potentially contaminated groundwater is encountered, then groundwater samples would be collected and tested to determine appropriate treatment and disposal. Hazardous waste would be transported and disposed of in accordance with applicable rules, regulations, and SCE standard protocols designed to protect the environment, workers, and the public.

#### 3.5.14.3.2 Volumes of Hazardous Waste

Only small volumes of hazardous waste are anticipated to be generated during construction of the GKR Project.

#### 3.5.14.3.3 Locations of Appropriate Disposal Facilities

The final disposition location of hazardous wastes would be determined by the construction contractor immediately prior to or during construction to SCE-approved facility. One or more of the following SCE-approved facilities may be used:

- Clean Harbors, Buttonwillow, LLC, 2500 West Lokern Road, Buttonwillow, CA 93206
- Kettleman Hills, 35251 Old Skyline Rd, Kettleman City, CA 93239

### *3.5.14.4 Excavated Material*

Materials excavated during removal of existing poles and installation of new subtransmission structures would primarily be: used to backfill holes left from removing poles; placed adjacent to new structures within the permanent disturbance area associated with each new structure; or placed on other areas identified for permanent disturbance (e.g., access road widening areas). In rare instances, excavated materials may be disposed off-site at an appropriate facility.

## 3.5.15 Fire Prevention and Response

### *3.5.15.1 Fire Prevention and Response Procedures*

During construction, SCE would implement standard fire prevention protocols during construction activities and comply with applicable laws and regulations, will implement the CPUC Draft Environment Measure: Construction Fire Prevention Plan, and will develop and implement a Fire Prevention and Emergency Response Plan per APM HAZ-3.

Construction areas would be grubbed/trimmed of vegetation and graded before the staging of equipment, and in such areas where overland travel may occur, dry vegetation would also be trimmed; such activities would minimize the potential for vehicles or equipment to start a fire.

In the event that the National Weather Service issues a Red Flag Warning during construction of the GKR Project, additional measures would be implemented to address smoking and fire rules, storage and parking areas, the use of gasoline-powered tools, the use of spark arresters on construction equipment, road closures, the use of a fire guard, fire suppression tools, fire suppression equipment, and training requirements.

### *3.5.15.2 Fire Breaks*

No new permanent fire breaks (i.e., areas cleared of vegetation) would be developed under the GKR Project. Areas around new structures would be maintained per the applicable standards in CPUC GO 128.

No areas would be cleared of vegetation solely for the purposes of creating a temporary fire break. In areas where hot work (e.g., welding) would be performed, or where equipment would be staged and operated where hot surfaces (e.g., exhaust systems) could come in contact with extant vegetation, such vegetation would be cleared or trimmed. This vegetation clearing or trimming would be contained within the construction work area identified for that given location.

# 3.6 Construction Workforce, Equipment, Traffic, and Schedule

## 3.6.1 Construction Workforce

### *3.6.1.1 Number of Construction Crew Members*

SCE anticipates a total of approximately 85 construction personnel working on any given day.

### *3.6.1.2 Crew Deployment*

SCE anticipates that two reconductoring crews would work concurrently. The estimated deployment and number of crew members would vary depending on factors such as material availability, resource availability, and construction scheduling. In general, construction efforts would occur in accordance with accepted construction industry standards. Construction would be performed by SCE construction crews and/or contractors. If SCE construction crews are used, they typically would be based at SCE's local facilities, (e.g., service centers, substations, etc.) or temporary staging areas set up for the GKR Project. Contractor construction personnel would be managed by SCE construction management personnel and based out of the contractor's existing yard or temporary staging areas set up for the GKR Project.

### *3.6.1.3 Activities to be Undertaken*

The different types of activities to be undertaken during construction, the number of crew members for each activity, and number and types of equipment expected to be used for each activity are presented in Table 3.6-1.

## 3.6.2 Construction Equipment

A tabular list of the types of equipment expected to be used during construction of the GKR Project, including the horsepower of each type of equipment, is presented in Table 3.6-1.

## 3.6.3 Construction Traffic

### *3.6.3.1 Transportation of Crews and Equipment*

Construction equipment would be transported to and from construction work areas along the GKR Project alignment by being driven (in the case of self-propelled vehicles) or towed (in the case of equipment that is not self-propelled) along public roadways and along the existing network of access roads.

Construction crews would be transported to and from construction work areas along the GKR Project alignment in construction vehicles (pick-up trucks or other self-propelled vehicles) or by helicopter.

Along the GKR Project alignment, it is likely that many pieces of construction equipment would be left at work areas overnight and on off-days (holidays, etc.) rather than being driven to and from construction work areas each day.

#### *3.6.3.2 Vehicle Types, Numbers, and Hours of Operation*

Information on the vehicle type, number of vehicles, and estimated hours of operation per day, week, and month for each construction activity are presented in Table 3.6-1.

#### *3.6.3.3 Vehicle Miles Traveled (VMT)*

The estimated number of vehicle trips and VMT for each construction activity is presented in Section 5.17.

**Table 3.6-1. Construction Equipment and Workforce**

| Work Activity | | | | Activity Production | | | |
|---|---|---|---|---|---|---|---|
| Primary Equipment Description | Estimated Equipment Horse-Power | Probable Fuel Type | Primary Equipment Quantity | Estimated Workforce | Estimated Schedule (Days) | Duration of Use (Hrs/Day) | Estimated Production Per Day |
| **Survey** | | | | **4** | **Duration Of Project** | | |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | — | Duration of Project | 10 | N/A |
| **Staging Areas** | | | | **5** | **Duration Of Project** | | |
| 1-Ton Truck, 4x4 | 300 | Diesel | 4 | — | Duration of Project | 4 | N/A |
| R/T Forklift | 350 | Diesel | 4 | | | 5 | |
| Boom/Crane Truck | 350 | Diesel | 4 | | | 5 | |
| Generator | 45 | Diesel | 4 | | | 10 | |
| Water Truck | 300 | Diesel | 8 | | | 10 | |
| Truck, Semi-Tractor | 500 | Diesel | 4 | | | 6 | |
| **Road Work** | | | | **6** | **84** | | **84 Miles** |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | — | 84 | 5 | 1 mile/day |
| Backhoe/Front Loader | 350 | Diesel | 1 | | 84 | 7 | |
| Track Type Dozer | 350 | Diesel | 1 | | 84 | 7 | |
| Motor Grader | 350 | Diesel | 1 | | 84 | 5 | |
| Water Truck | 300 | Diesel | 2 | | 84 | 10 | |
| Drum Type Compactor | 250 | Diesel | 1 | | 84 | 5 | |
| Excavator | 300 | Diesel | 1 | | 42 | 7 | |
| Lowboy Truck/Trailer | 500 | Diesel | 1 | | 42 | 4 | |
| **Install TSP Foundations** | | | | **5** | **238** | | **119 TSPs** |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 2 | — | 238 | 5 | 0.5 TSP |
| Boom/Crane Truck | 350 | Diesel | 1 | | 238 | 7 | |
| Backhoe/Front Loader | 200 | Diesel | 1 | | 238 | 10 | |
| Auger Truck | 500 | Diesel | 1 | | 179 | 10 | |
| Water Truck | 350 | Diesel | 1 | | 238 | 10 | |
| Dump Truck | 350 | Diesel | 1 | | 238 | 10 | |
| Concrete Mixer Truck | 425 | Diesel | 2 | | 179 | 6 | |
| **TSP Haul** | | | | **5** | **30** | | **119 TSPs** |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 2 | — | 30 | 8 | 4 TSPs |
| Boom/Crane Truck | 350 | Diesel | 1 | | 30 | 8 | |
| Flat Bed Pole Truck | 400 | Diesel | 2 | | 30 | 10 | |
| Water Truck | 350 | Diesel | 1 | | 30 | 10 | |

**Table 3.6-1. Construction Equipment and Workforce**

| Work Activity | | | | Activity Production | | | |
|---|---|---|---|---|---|---|---|
| **Primary Equipment Description** | **Estimated Equipment Horse-Power** | **Probable Fuel Type** | **Primary Equipment Quantity** | **Estimated Workforce** | **Estimated Schedule (Days)** | **Duration of Use (Hrs/Day)** | **Estimated Production Per Day** |
| **TSP Assembly** | | | | **5** | **119** | | **119 TSPs** |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 2 | — | 119 | 6 | 1 TSP |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | | 119 | 6 | |
| Water Truck | 350 | Diesel | 1 | | 119 | 10 | |
| Compressor Trailer | 60 | Diesel | 1 | | 119 | 6 | |
| Boom/Crane Truck | 350 | Diesel | 1 | | 119 | 7 | |
| **TSP Erection** | | | | 5 | **119** | | **119 TSPs** |
| 3/4-Ton Truck, 4x4 | 275 | Diesel | 1 | — | 119 | 6 | 1 TSP |
| 1-Ton Truck, 4x4 | 300 | Diesel | 1 | | 119 | 6 | |
| Water Truck | 350 | Diesel | 1 | | 119 | 10 | |
| Compressor Trailer | 60 | Diesel | 1 | | 119 | 6 | |
| R/T Crane | 350 | Diesel | 1 | | 119 | 7 | |
| Jet A Fuel Truck | 300 | Diesel | 1 | | 12 | 4 | |
| Helicopter Support Truck | 300 | Diesel | 1 | | 12 | 6 | |
| Heavy-duty Helicopter | | Jet A | 1 | | 12 | 1 | |
| **Install TSP H-frame Foundations** | | | | **5** | **8** | | **4 TSP H-frames** |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 2 | — | 8 | 5 | 0.5 TSP |
| Boom/Crane Truck | 350 | Diesel | 1 | | 8 | 7 | |
| Backhoe/Front Loader | 200 | Diesel | 1 | | 8 | 10 | |
| Auger Truck | 500 | Diesel | 1 | | 6 | 10 | |
| Water Truck | 350 | Diesel | 1 | | 8 | 10 | |
| Dump Truck | 350 | Diesel | 1 | | 8 | 10 | |
| Concrete Mixer Truck | 425 | Diesel | 2 | | 6 | 6 | |
| **TSP H-frame Haul** | | | | **5** | **4** | | **4 TSP H-frames** |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 2 | — | 4 | 8 | 1 TSP H-frame |
| Boom/Crane Truck | 350 | Diesel | 1 | | 4 | 8 | |
| Flat Bed Pole Truck | 400 | Diesel | 2 | | 4 | 10 | |
| Water Truck | 350 | Diesel | 1 | | 4 | 10 | |
| **TSP H-frame Assembly** | | | | **5** | **8** | | **4 TSP H-frames** |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 2 | — | 8 | 6 | 0.5 TSP H-frame |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | | 8 | 6 | |
| Water Truck | 350 | Diesel | 1 | | 8 | 10 | |
| Compressor Trailer | 60 | Diesel | 1 | | 8 | 6 | |
| Boom/Crane Truck | 350 | Diesel | 1 | | 8 | 7 | |

**Table 3.6-1. Construction Equipment and Workforce**

| Work Activity | | | | Activity Production | | | |
|---|---|---|---|---|---|---|---|
| Primary Equipment Description | Estimated Equipment Horse-Power | Probable Fuel Type | Primary Equipment Quantity | Estimated Workforce | Estimated Schedule (Days) | Duration of Use (Hrs/Day) | Estimated Production Per Day |
| **TSP H-frame Erection** | | | | **5** | **8** | | **4 TSP H-frames** |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 1 | — | 8 | 6 | 0.5 TSP H-frame |
| 1-Ton Truck, 4x4 | 300 | Diesel | 1 | | 8 | 6 | |
| Water Truck | 350 | Diesel | 1 | | 8 | 10 | |
| Compressor Trailer | 60 | Diesel | 1 | | 8 | 6 | |
| R/T Crane | 350 | Diesel | 1 | | 8 | 7 | |
| Jet A Fuel Truck | 300 | Diesel | 1 | | 1 | 4 | |
| Helicopter Support Truck | 300 | Diesel | 1 | | 1 | 6 | |
| Heavy-duty Helicopter | | Jet A | 1 | | 1 | 1 | |
| **Existing Pole Removal** | | | | **5** | **37** | | **145 Poles** |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | — | 37 | 10 | 4 Poles |
| Compressor Trailer | 60 | Diesel | 1 | | 37 | 5 | |
| Manlift/Bucket Truck | 250 | Diesel | 1 | | 37 | 8 | |
| Boom/Crane Truck | 350 | Diesel | 1 | | 37 | 8 | |
| Flat Bed Pole Truck | 400 | Diesel | 1 | | 37 | 10 | |
| Water Truck | 300 | Diesel | 1 | | 37 | 10 | |
| **Existing Lattice Structure/TSP Removal** | | | | **5** | **802** | | **401 TSPs/Lattice Structures** |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | — | 802 | 10 | 0.5 TSPs or Lattice Steel Structures |
| Compressor Trailer | 60 | Diesel | 1 | | 802 | 5 | |
| Manlift/Bucket Truck | 250 | Diesel | 1 | | 802 | 8 | |
| Backhoe/Front Loader | 125 | Diesel | 2 | | 802 | 10 | |
| Boom/Crane Truck | 350 | Diesel | 1 | | 802 | 8 | |
| Flat Bed Pole Truck | 400 | Diesel | 1 | | 802 | 10 | |
| Water Truck | 300 | Diesel | 1 | | 802 | 10 | |
| Jet A Fuel Truck | 300 | Diesel | 1 | | 80 | 4 | |
| Helicopter Support Truck | 300 | Diesel | 1 | | 80 | 6 | |
| Medium-duty Helicopter | | Jet A | 1 | | 80 | 6 | |
| Dump Truck | 350 | Diesel | 1 | | 802 | 10 | |
| Excavator | 250 | Diesel | 1 | | 802 | 10 | |
| R/T Crane (M) | 215 | Diesel | 1 | | 802 | 5 | |
| R/T Crane (L) | 300 | Diesel | 1 | | 802 | 7 | |
| **LWS Pole Haul** | | | | **5** | **85** | | **338 LWS Poles** |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 1 | — | 85 | 10 | 4 Poles |
| Water Truck | 300 | Diesel | 1 | | 85 | 10 | |
| Boom/Crane Truck | 350 | Diesel | 1 | | 85 | 8 | |
| Flat Bed Pole Truck | 400 | Diesel | 1 | | 85 | 10 | |

**Table 3.6-1. Construction Equipment and Workforce**

| Work Activity | | | | Activity Production | | | |
|---|---|---|---|---|---|---|---|
| Primary Equipment Description | Estimated Equipment Horse-Power | Probable Fuel Type | Primary Equipment Quantity | Estimated Workforce | Estimated Schedule (Days) | Duration of Use (Hrs/Day) | Estimated Production Per Day |
| **LWS Pole Assembly** | | | | **5** | **85** | | **338 LWS Poles** |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 2 | — | 85 | 6 | 4 Poles |
| Compressor Trailer | 60 | Diesel | 1 | | 85 | 6 | |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | | 85 | 10 | |
| Water Truck | 350 | Diesel | 1 | | 85 | 10 | |
| Boom/Crane Truck | 350 | Diesel | 1 | | 85 | 8 | |
| **Install LWS Pole** | | | | **5** | **85** | | **338 LWS Poles** |
| 1-Ton Truck, 4x4 | 300 | Diesel | 1 | — | 85 | 6 | 4 Poles |
| Manlift/Bucket Truck | 350 | Diesel | 1 | | 85 | 10 | |
| Boom/Crane Truck | 350 | Diesel | 1 | | 85 | 7 | |
| Auger Truck | 210 | Diesel | 1 | | 85 | 8 | |
| Water Truck | 300 | Diesel | 1 | | 85 | 10 | |
| Backhoe/Frontloader | 125 | Diesel | 1 | | 85 | 10 | |
| Extendable Flat Bed Pole Truck | 400 | Diesel | 1 | | 85 | 6 | |
| Jet A Fuel Truck | 300 | Diesel | 1 | | 9 | 4 | |
| Helicopter Support Truck | 300 | Diesel | 1 | | 9 | 6 | |
| Medium-duty Helicopter | | Jet A | 1 | | 9 | 6 | |
| **LWS H-frame Haul** | | | | **5** | **6** | | **11 H-frames** |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 1 | — | 6 | 10 | 2 H-frames |
| Water Truck | 300 | Diesel | 0.5 | | 6 | 10 | |
| Boom/Crane Truck | 350 | Diesel | 1 | | 6 | 8 | |
| Flat Bed Pole Truck | 400 | Diesel | 1 | | 6 | 10 | |
| **LWS H-frame Assembly** | | | | **5** | **6** | | **11 H-frames** |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 2 | — | 6 | 6 | 2 H-frames |
| Compressor Trailer | 60 | Diesel | 1 | | 6 | 6 | |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | | 6 | 10 | |
| Water Truck | 350 | Diesel | 1 | | 6 | 10 | |
| Boom/Crane Truck | 350 | Diesel | 1 | | 6 | 8 | |
| **Install LWS H-frame** | | | | **5** | **6** | | **11 H-frames** |
| 1-Ton Truck, 4x4 | 300 | Diesel | 1 | — | 6 | 6 | 2 H-frames |
| Manlift/Bucket Truck | 350 | Diesel | 1 | | 6 | 10 | |
| Boom/Crane Truck | 350 | Diesel | 1 | | 6 | 7 | |
| Auger Truck | 210 | Diesel | 1 | | 6 | 8 | |
| Water Truck | 300 | Diesel | 1 | | 6 | 10 | |
| Backhoe/Frontloader | 125 | Diesel | 1 | | 6 | 10 | |
| Extendable Flat Bed Pole Truck | 400 | Diesel | 1 | | 6 | 6 | |

**Table 3.6-1. Construction Equipment and Workforce**

| Work Activity | | | | Activity Production | | | |
|---|---|---|---|---|---|---|---|
| Primary Equipment Description | Estimated Equipment Horse-Power | Probable Fuel Type | Primary Equipment Quantity | Estimated Workforce | Estimated Schedule (Days) | Duration of Use (Hrs/Day) | Estimated Production Per Day |
| **Install/Remove Conductor/OPGW/OHGW** | | | | **20** | **217** | | **65 Linear Miles** |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 1 | — | 217 | 10 | 0.3 Miles/day |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | | 217 | 10 | |
| Manlift/Bucket Truck | 250 | Diesel | 1 | | 217 | 10 | |
| Boom/Crane Truck | 350 | Diesel | 1 | | 217 | 10 | |
| Dump Truck | 350 | Diesel | 1 | | 143 | 10 | |
| Wire Truck/Trailer | 350 | Diesel | 2 | | 109 | 10 | |
| Sock Line Puller | 300 | Diesel | 1 | | 55 | 10 | |
| Bull Wheel Puller | 350 | Diesel | 1 | | 109 | 10 | |
| Hydraulic Rewind Puller | 350 | Diesel | 1 | | 217 | 10 | |
| Static Truck/ Tensioner | 350 | Diesel | 1 | | 217 | 10 | |
| Backhoe/Front Loader | 125 | Diesel | 1 | | 55 | 8 | |
| Truck, Semi-Tractor | 400 | Diesel | 2 | | 217 | 10 | |
| Lowboy Truck/Trailer | 450 | Diesel | 2 | | 217 | 10 | |
| Water Truck | 300 | Diesel | 1 | | 217 | 10 | |
| Jet A Fuel Truck | 300 | Diesel | 1 | | 109 | 4 | |
| Helicopter Support Truck | 300 | Diesel | 1 | | 109 | 7 | |
| Light Helicopter | | Jet A | 1 | | 109 | 7 | |
| Conductor Splicing Rig | 350 | Diesel | 1 | | 55 | 10 | |
| Fiber Splicing Lab | 300 | Diesel | 1 | | 55 | 10 | |
| **Install/Remove Guard Structures** | | | | **5** | **39** | | **194 Structures** |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 2 | — | 39 | 8 | 5 Structures |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | | 39 | 8 | |
| Compressor Trailer | 60 | Diesel | 2 | | 39 | 7 | |
| Backhoe/Front Loader | 125 | Diesel | 1 | | 39 | 10 | |
| Water Truck | 300 | Diesel | 1 | | 39 | 5 | |
| Manlift/Bucket Truck | 250 | Diesel | 1 | | 39 | 8 | |
| Boom/Crane Truck | 350 | Diesel | 1 | | 39 | 10 | |
| Auger Truck | 500 | Diesel | 1 | | 39 | 8 | |
| Extendable Flat Bed Pole Truck | 400 | Diesel | 1 | | 39 | 8 | |
| **Telecommunications Underground Infrastructure Installation** | | | | **6** | **5** | | **600 Feet** |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | — | 5 | 4 | 125 Feet/Day |
| Backhoe/Front Loader | 125 | Diesel | 1 | | 5 | 6 | |
| Dump Truck | 350 | Diesel | 2 | | 5 | 6 | |
| Pipe Truck/Trailer | 275 | Diesel | 1 | | 5 | 8 | |
| Concrete Mixer Truck | 350 | Diesel | 3 | | 5 | 2 | |

**Table 3.6-1. Construction Equipment and Workforce**

| Work Activity | | | | Activity Production | | | |
|---|---|---|---|---|---|---|---|
| **Primary Equipment Description** | **Estimated Equipment Horse-Power** | **Probable Fuel Type** | **Primary Equipment Quantity** | **Estimated Workforce** | **Estimated Schedule (Days)** | **Duration of Use (Hrs/Day)** | **Estimated Production Per Day** |
| Water Truck | 300 | Diesel | 1 | | 5 | 6 | |
| Compressor Trailer | 60 | Diesel | 1 | | 5 | 4 | |
| Lowboy Truck/Trailer | 450 | Diesel | 1 | | 5 | 4 | |
| **Restoration** | | | | **7** | **65** | | **65 Miles** |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | — | 65 | 4 | 1 Mile |
| Backhoe/Front Loader | 125 | Diesel | 1 | | 65 | 4 | |
| Motor Grader | 250 | Diesel | 1 | | 65 | 6 | |
| Water Truck | 300 | Diesel | 1 | | 65 | 8 | |
| Drum Type Compactor | 100 | Diesel | 1 | | 65 | 4 | |
| Lowboy Truck/Trailer | 450 | Diesel | 1 | | 65 | 4 | |

### 3.6.4 Construction Schedule

#### *3.6.4.1 Proposed Construction Schedule*

SCE anticipates that construction of the GKR Project would take approximately 24 months.[15] Construction would commence following CPUC approval, final engineering, procurement activities, land acquisitions, and receipt of all applicable permits.

**Table 3.6-2. Proposed Construction Schedule**

| Project Activity | Approximate Duration (months) | Approximate Start Date |
|---|---|---|
| PTC | 22 | February 2022 |
| Final Engineering | 8 | July 2024 |
| Right-of-Way/Property Acquisition | 18 | January 2024 |
| Acquisition of Required Permits | 13 | March 2023 |
| Subtransmission Line Construction | 24 | November 2024 |
| Cleanup | 8 | February 2026 |
| Project Operational | N/A | October 2026 |

The proposed construction schedule (e.g., month and year) for each GKR Project activity is presented in Table 3.6-2.

#### *3.6.4.2 Construction Sequencing*

The potential sequencing of construction activities by segment is presented in Section 3.5.5.2; each of the work activities would be performed as described throughout Section 3.5.

Some activities may be performed concurrently; for instance, pull-and-tension/stringing sites may be established at the same time as guard structures are being installed, and the restoration of disturbed areas may occur at the same time as staging area demobilization and restoration is occurring. Further, work could occur in one or more segments simultaneously.

#### *3.6.4.3 Total Duration of Construction Activities*

The total duration of each construction activity is presented in Table 3.6-1.

#### *3.6.4.4 Seasonal Considerations*

Seasonal considerations may affect SCE's ability to perform construction activities along the GKR Project alignment. These considerations include variable winter weather which could force halts to construction during rain events; construction halts during nesting bird season; and species-specific disturbance restrictions. SCE has taken these considerations into account to the extent that future actions outside of SCE's control can be addressed.

### 3.6.5 Work Schedule

#### *3.6.5.1 Anticipated Work Schedule*

To the extent feasible, construction activities would occur between 0700 hours and 1900 hours, Monday through Saturday or during the hours established in local ordinances and/or in any ministerial permits

[15] The proposed construction schedule may exceed 24 months due to delays including but not limited to those associated with inclement weather and stoppages necessary to protect biological resources (e.g., nesting birds).

obtained. However, at limited times some construction along the GKR Project alignment may be required or finished outside these hours. The dates and locations of such work is not known at this time.

### *3.6.5.2 Construction Durations*

The duration of construction activities at a given type of work area will vary; however, approximate durations are presented below.

#### 3.6.5.2.1 Helicopter Landing Zones and Touchdown Areas Duration

Helicopter landing zones established in staging areas would be utilized during the period when that staging area is necessary to support construction in the area. This could run from six months to two years, depending upon final construction sequencing.

A given helicopter touchdown area within a given wire pull would be used during the duration of the conductor/OPGW installation activities. A given wire pull is anticipated to have a construction duration of approximately 10 days.

#### 3.6.5.2.2 Temporary Work Pads Duration

For all activities at a temporary work pad, the work pad would be established, including vegetation clearing/trimming as necessary; this activity would generally be performed in one day. The specific construction activities at any given temporary work pad would vary depending on the activity to be performed, as described below.

#### 3.6.5.2.3 Conductor Removal

On any given day, crews would install sheaves and other conductor removal/installation hardware and would transfer the existing conductors into the sheaves. When all the existing structures in a given wire-pull have had sheaves and other conductor removal/installation hardware installed and the existing conductors transferred into the sheaves, the conductor would then be removed, which would require crews visiting the work pad; this would be performed in one day.

#### 3.6.5.2.4 Structure Removal

Removal of an existing LST and associated foundations may require several days of work at any given location. Removal of an existing pole or H-frame would generally be completed in one day.

#### 3.6.5.2.5 Tubular Steel Pole Installation

Installing the TSP foundation would generally be performed over two or three consecutive days. The concrete foundation would then be allowed to set for a period of time. Installation of the TSP on the foundation would require several consecutive days of work at any given location.

#### 3.6.5.2.6 Lightweight Steel Pole Installation

LWS poles would generally be installed over a period of one to two consecutive days at any given location.

#### 3.6.5.2.7 Conductor Installation

Conductor installation would generally occur over a period of three non-consecutive days. On any given day, crews would string a pulling rope or cable through sheaves installed on new TSPs or LWS poles and install new insulators and other fittings. On another day, the new conductor and OPGW would be pulled through the sheaves. On the third day of work at a given temporary work pad, crews would sag and clip-in the new conductors and OPGW. Note that the approximately three working-days on a temporary work pad would not be performed consecutively; these three days of work would occur over an approximate 10-day period.

#### 3.6.5.2.8 Structure Modification

Modifications to an existing structure would generally be performed over a one or two-day period.

#### 3.6.5.2.9 Temporary Guard Structures Duration

Construction activities at any temporary guard structure location would occur on two non-consecutive days. On one day, crews would install the temporary guard structure at a given location. This guard structure would then remain in-place until reconductoring activities in that area are completed. At that time, crews would remove the temporary guard structure at the given location; this activity would occur generally in a single day.

#### 3.6.5.2.10 Pull-and-Tension/Stringing Sites Duration

The construction duration at a pull-and-tension/stringing site located at the end of a portion of subtransmission line to be reconductored would be approximately 10 days. The construction duration at a pull-and-tension/stringing site not located at the end of a portion of subtransmission line to be reconductored would be approximately 20 days; this accounts for the durations to complete wire pulls on both sides of the pull-and-tension/stringing site. These durations do not include any site preparation work (clearing vegetation, preparing the surface, etc.) that may be needed; such site preparation work is estimated to require 2 days per pull-and-tension/stringing site.

#### 3.6.5.2.11 Splice Sites, Conductor and Overhead Groundwire Removal Duration

The construction duration at a given splice removal site would be one day.

#### 3.6.5.2.12 Splice Sites, Conductor and Overhead Groundwire Installation Duration

The construction duration at a given splice installation site would be approximately 20 days. This duration does not include any site preparation work (clearing vegetation, preparing the surface, etc.) that may be needed; such site preparation work is estimated to require 2 days per pull-and-tension/stringing site.

#### 3.6.5.2.13 Staging Area Activity Duration

Work at a given staging area will occur during the period when that staging area is necessary to support construction in the area. The duration of use for a given staging area could run from six months to two years, depending upon final construction sequencing.

## 3.7 Post-Construction

### 3.7.1 Configuring and Testing

Under the GKR Project, conductor would be re-configured at Kern River 1 Hydroelectric Substation as a result of eliminating one circuit landing at this substation. Further, relays would be reprogrammed and tested at all substations. Along the GKR Project segments, the newly-installed conductor would be cut-over per SCE standards, and the phasing would be checked.

### 3.7.2 Landscaping

No landscaping will be installed as part of the GKR Project.

### 3.7.3 Demobilization and Site Restoration

#### *3.7.3.1 Demobilization*

Demobilization activities would vary for staging areas and construction work areas. For construction work areas, where no stationary equipment or materials would be located and where no intensive surface preparation occurred, mobile equipment would be removed from the construction work area, any and all construction-related materials (packaging, trash, etc.) would be removed, and construction-related temporary BMPs would be removed if they are not necessary for planned restoration work. The construction work area would then be subject to restoration and final stabilization as described below.

At staging areas, all stationary equipment (office trailers, generators, etc.) and remaining construction-related material would be removed, as would all mobile equipment not needed for demobilization of the staging area. The staging area would then be returned to its pre-construction condition or would be subject to restoration as described below.

#### *3.7.3.2 Site Restoration*

Site restoration activities would vary across the GKR Project alignment. Site restoration activities would be guided by federal, state, and local requirements and by the conditions attached to project approvals from federal and state regulators. These requirements and conditions would be reflected in the SWPPP(s), in the Habitat Restoration and Revegetation Plan (HRRP) developed per APM BIO-RES-1, and in the Invasive Plant Management Plan (IPMP) developed per APM BIO-RES-2.

Site restoration activities would generally be performed utilizing the types of equipment listed for 'Restoration' in Table 3.6-1.

##### 3.7.3.2.1 Restoring Natural Drainage Patterns

Natural drainages, if impacted during construction of the GKR Project, would be returned to pre-existing contours upon completion of the work as described in APM WET-1. Recontouring would restore the pre-existing hydrological function to the system. Further, SCE would obtain all necessary permits and authorizations, including those from the USACE, the RWQCB, and CDFW prior to construction in drainages. SCE would comply with all conditions of approval identified in permits and authorizations. Restoration of natural drainage patterns outside of drainages would be accomplished by restoring, in-place, temporarily disturbed areas to pre-project contours.

##### 3.7.3.2.2 Recontouring Disturbed Soil

Temporarily disturbed areas would be restored in-place to their approximate pre-project contours.

##### 3.7.3.2.3 Removing Construction Debris

Construction debris (e.g., removed conductor and OHGW, packaging materials, etc.) would be removed from GKR Project construction work areas and staging areas throughout the duration of the GKR Project. Construction debris would be removed in light-duty vehicles (pick-up trucks) and heavy-duty vehicles (e.g., in dump trucks, on flatbed trailers, etc.).

##### 3.7.3.2.4 Vegetation

As would be described in the SWPPP(s) that would be developed for the GKR Project, construction work areas and staging areas would be stabilized following construction; such stabilization could include seeding disturbed areas.

Where construction of the GKR Project disturbs sensitive habitats, restoration and/or revegetation would be performed in those areas as described in the HRRP developed per APM BIO-RES-1. This Plan would be developed by SCE with the appropriate resource agencies and implemented after construction is complete. Additional information pertaining to the habitat restoration and/or revegetation plan(s) can be found in Section 5.4, Biological Resources.

#### 3.7.3.2.5 Permanent and Semi-Permanent Erosion Control Measures

No permanent erosion control measures would be installed under the GKR Project. Final stabilization erosion control measures would be emplaced following demobilization and as part of site restoration activities; typical BMPs that may be installed during the restoration phase are those presented in Section 3.5.11.

#### 3.7.3.2.6 Restoration of All Disturbed Areas and Access Roads

As would be described in the SWPPP(s) that would be developed for the GKR Project, construction work areas and staging areas would be stabilized following construction; such stabilization could include seeding disturbed areas.

Where construction of the GKR Project disturbs sensitive habitats, restoration and/or revegetation would be performed in those areas as described in the HRRP developed per APM BIO-RES-1. This Plan would be developed by SCE with the appropriate resource agencies and implemented after construction is complete. Additional information pertaining to the habitat restoration and/or revegetation plan(s) can be found in Section 5.4, Biological Resources.

Existing access and spur roads would not be restored; these features represent an extant permanent disturbance, and these access and spur roads are, and would continue to be, utilized during O&M-related activities.

No damage to sidewalks is anticipated under the GKR Project. Few sidewalks are crossed by the GKR Project alignment; where sidewalks are located, any guard structures installed in these areas would be set-back from the roadway for, among other purposes, avoiding damage to sidewalks.

No damage to agricultural infrastructure is anticipated under the GKR Project. Extensive agricultural land uses are extant in Segments 1, 2, and 5. Numerous existing structures to be removed, and new structures to be installed, are located on lands in active agricultural production. SCE will coordinate with landowners to either avoid agricultural infrastructure or to have such infrastructure relocated by the landowner to avoid damage.

Landscaping located on private parcels within SCE's easement may be trimmed or removed per the terms of SCE's easements over said parcels if such trimming or removal is authorized under the easements. Such landscaping would not be restored as part of the GKR Project. Any landscaping located outside of SCE's easements that is damaged during construction of the GKR Project would be restored, or suitable compensation for the damage made, as determined during negotiations between SCE and the landowner.

No public trails would be used for access during construction of the GKR Project. Some of SCE's existing access roads may be used by the public as trails. As stated above, no extant access roads would be restored.

#### 3.7.3.2.7 Road Repaving and Striping

No road repaving or striping would be required under the GKR Project.

## 3.8 Operation and Maintenance

SCE currently performs O&M activities as described below along the subtransmission lines that are included under the GKR Project. No material changes in the O&M activities described below, or the locations of these activities, are anticipated with implementation of the GKR Project.

In addition to regular O&M activities, SCE conducts a wide variety of emergency repairs in response to emergency situations such as damage resulting from high winds, storms, fires, and other natural disasters, and accidents. Such repairs could include replacement of downed structures or lines, or re-stringing of conductors. Emergency repairs could be needed at any time.

Ongoing O&M activities are necessary to ensure reliable service, as well as the safety of the utility worker and the general public as mandated by the CPUC. SCE facilities are subject to Federal Energy Regulatory Commission jurisdiction. SCE transmission facilities are under operational control of the CAISO.

### 3.8.1 Regulations and Standards

The subtransmission lines included under the GKR Project would be maintained in a manner consistent with GO 95 and GO 128 as applicable along with federal, state, and local regulations. These GOs contain the ruling standards for the operation and maintenance of transmission lines in California.

SCE's 2020-2022 Wildfire Mitigation Plan is provided in Appendix I. No special procedures for wildfire management, beyond those addressed in the plan or required by regulation, are included under the GKR Project.

### 3.8.2 System Controls and Operation Staff

#### *3.8.2.1 Systems and Methods*

The systems and methods used for monitoring and control of the subtransmission lines included under the GKR Project would not be changed as a result of the GKR Project. Normal operation of the lines would be controlled remotely through SCE control systems, and manually in the field as required.

#### *3.8.2.2 New Full-Time Staff*

No additional personnel would be required for O&M activities.

### 3.8.3 Inspection Programs

#### *3.8.3.1 Existing and Proposed Inspection Programs*

The existing inspection programs implemented for the subtransmission lines included under the GKR Project would not be changed as a result of the GKR Project. SCE inspects the subtransmission overhead facilities in a manner consistent with GO 165 a minimum of once per year, but inspections usually occur more frequently based on system reliability.

#### *3.8.3.2 Enhanced Inspections*

Portions of the GKR Project alignment are located in a High Fire Threat District: portions of Segments 4 and the entirety of Segment 5 are located in an area designated by the CPUC as Tier 3-Extreme, and portions of Segments 1, 2, 3, and 4 are located in areas designated by the CPUC as Tier 2-Elevated. Enhanced inspections as described in Section 5.3.4, Asset Management and Inspections of SCE's 2020-2022 Wildfire Mitigation Plan (Appendix I) would be performed as applicable in these areas.

### *3.8.3.3 Inspection Processes*

GO 165 inspections are performed via ground and/or aerial observation. No new access would be required for future inspections; ground-based inspections would be performed using the existing network of access and spur roads.

## 3.8.4 Maintenance Programs

### *3.8.4.1 Existing and Proposed Maintenance Programs*

The existing maintenance activities performed along the subtransmission lines included under the GKR Project would be unchanged as a result of the construction of the project. Maintenance would occur as needed and could include activities such as repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles and towers, tree trimming, brush and weed control, and access road maintenance.

Most regular O&M activities for overhead facilities are performed from existing access roads with no surface disturbance. Repairs done to existing facilities, such as repairing or replacing existing poles and towers, could occur in undisturbed areas.

Existing conductors could require re-stringing to repair damage. Some pull-and-tension/stringing site locations could be in previously undisturbed areas and at times, conductors could be passed through existing vegetation during re-stringing activities.

Insulators could require periodic washing with water to prevent the buildup of contaminants (dust, salts, animal droppings, smog, condensation, etc.) and to reduce the possibility of electrical arcing which can result in circuit outages and potential fire. Frequency of insulator washing is region specific and based on local conditions and build-up of contaminants. Replacement of insulators, hardware, and other components is performed as needed to maintain circuit reliability.

Some structure locations and/or laydown areas could be in previously undisturbed areas and could result in ground and/or vegetation disturbance, though attempts would be made to utilize previously disturbed areas to the greatest extent possible. In some cases, new temporary access is created to remove and replace an existing structure.

In some cases, structures do not have existing access roads and are accessed on foot, by helicopter, or by creating temporary access areas. O&M-related helicopter activities could include transportation of transmission line workers, delivery of equipment and materials to structure sites, structure placement, hardware installation, and conductor and OPGW stringing operations. Helicopter landing areas could occur where access by road is infeasible.

### *3.8.4.2 Scheduled Maintenance or Facility Replacement*

With the exception of the maintenance discussed above in Section 3.8.4.1, there is no scheduled maintenance associated with the subtransmission lines included under the GKR Project. Replacement of the conductor to be installed under the GKR Project at the end of its useful life would be performed generally as described in this Section.

### *3.8.4.3 Parts and Materials that require Regular Maintenance*

No parts or materials installed under the GKR Project would require regular maintenance; maintenance would be performed on an as-needed basis.

#### *3.8.4.4 Access Road Maintenance*

Routine access road maintenance is conducted on an annual and/or as-needed basis. Road maintenance includes maintaining a vegetation-free corridor (to facilitate access and for fire prevention) and blading to smooth over washouts, eroded areas, and washboard surfaces as needed. Access road maintenance could include brushing (i.e., trimming or removal of vegetation) approximately 2 to 5 feet beyond berms or the road edge when necessary to keep vegetation from intruding into the roadway. Road maintenance would also include cleaning ditches, moving, and establishing berms, clearing, and making functional drain inlets to culverts, culvert repair, clearing and establishing water bars, and cleaning and repairing over-side drains. Access road maintenance includes the repair, replacement, and installation of storm water diversion devices on an as-needed basis.

#### *3.8.4.5 Maintenance for Surface or Color Treatment*

No existing structures along the GKR Project alignment have surface or color treatments, and no new structures installed under the project would have surface or color treatments. Therefore, no maintenance for surface or color treatment is currently, or would be, performed.

#### *3.8.4.6 Cathodic Protection Maintenance*

No cathodic protection systems are installed on or for the existing structures along the GKR Project alignment, and no new cathodic protection system would be installed under the project. Therefore, no maintenance of cathodic protection systems is currently, or would be, performed.

#### *3.8.4.7 Landscaping Maintenance*

No landscaping would be installed under the GKR Project, and therefore no new landscaping maintenance would result from construction of the GKR Project. Any existing landscape maintenance activities would continue.

### 3.8.5 Vegetation Management Programs

#### *3.8.5.1 Vegetation Management Programs*

Regular tree pruning must be performed to be in compliance with existing state and federal laws, rules, and regulations and is crucial for maintaining reliable service, especially during severe weather or disasters. Tree pruning standards for distances from overhead lines have been set by the CPUC (GO 95, Rule 35), PRC Section 4293, CCR Title 14, Article 4, and other government and regulatory agencies. SCE’s standard approach to tree pruning during O&M is to remove at least the minimum required by law plus one years’ growth (species dependent).

SCE maintains vegetation-free access roads, helipads, and clearances around electrical lines. Further, clearance of brush and weeds around structures as may be required by applicable regulations on ROWs is necessary for fire protection. A 10-foot radial clearance around non-exempt poles (as defined by CCR Title 14, Article 4) and a 25 to 50-foot radial clearance around non-exempt towers (as defined by CCR Title 14, Article 4) are maintained in accordance with PRC Section 4292.

#### *3.8.5.2 Enhanced Vegetation Management*

Among the vegetation management-related O&M activities that would continue after construction of the GKR Project would be on-going implementation of SCE’s 2020-2022 Wildfire Mitigation Plan (and its subsequent, to-be-developed, iterations) in areas designated by the CPUC as Fire Threat Area Tier 2–Elevated and Tier 3–Extreme. The Wildfire Mitigation Plan describes strategies, programs, and activities (including vegetation management) that are in place, being implemented or are under development by SCE to proactively address and mitigate the threat of electrical infrastructure-associated ignitions that could lead to wildfires.

## 3.9 Decommissioning

### 3.9.1 Decommissioning

SCE presently has no plans to abandon the subtransmission lines included under the GKR Project, and there are no reasonably foreseeable plans for the disposal, recycling, or future abandonment of any of the facilities included under the GKR Project.

## 3.10 Anticipated Permits and Approvals

### 3.10.1 Anticipated Permits and Approvals

The necessary federal, state, regional, and local discretionary permits that may be required for the GKR Project are listed in Table 3.10-1. Ministerial permits, including encroachment permits from state or local agencies, are not listed in Table 3.10-1.

### 3.10.2 Rights-of-Way or Easement Applications

No applications for additional permanent ROWs or easements from federal or state agencies are anticipated for the GKR Project. SCE currently holds valid rights over public lands sufficient for the replacement of existing infrastructure.

SCE would apply for and obtain temporary rights over public lands for construction work areas located outside its existing ROW; such temporary rights would be applied for and obtained prior to construction.

## 3.11 Applicant Proposed Measures

SCE will implement the APMs listed in Table 3.11-1 during construction of the GKR Project. Within Chapter 5, the basis for selecting a particular APM and how the APM would reduce the impacts of the project are described. SCE has carefully considered each CPUC Draft Environmental Measure identified in Chapter 5 of this PEA Checklist and has indicated that CPUC Draft Environmental Measures will be applied where applicable.

## 3.12 Project Description Graphics, Mapbook, and GIS Requirements

### 3.12.1 Graphics

Diagrams as detailed in the CPUC Guidelines are found in Chapter 3, Chapter 5, and in Appendix A of this PEA document.

### 3.12.2 Mapbook

A mapbook as detailed in the CPUC Guidelines is presented in Appendix A of this PEA document.

### 3.12.3 GIS Data

GIS data are provided under separate electronic cover.

### 3.12.4 GIS Requirements

The requested information for each pole/tower that would be installed or removed is included in the GIS provided under separate electronic cover.

Page intentionally left blank.

**Table 3.10-1. Anticipated Permits and Approvals**

| Agency | Permit | Regulation | Protected Resource | Trigger | Application Process | Timing |
|---|---|---|---|---|---|---|
| USACE | 404 Permit | Clean Water Act (CWA) | Waters of the United States (including wetlands) | Placement of dredge or fill material into waters of the U.S., including wetlands. If project impacts less than 0.5 acres a nationwide permit (NWP) is typically issued | NWP: prepare a preconstruction notification (PCN) along with the draft Corps' application (Engineer Form 4345). Information in the PCN includes, but is not limited to: results of wetland delineation including areas of waters of the U.S.; temporary and permanent impacts to waters of the U.S. and discussion of avoidance; construction techniques, timeline, and equipment that would be used; special status species that potentially occur in the project area, and discussion of mitigation (if applicable) to replace wetlands | NWP: takes approximately nine months from the date of application submittal (depending on level of impacts and level of consultation required by other agencies). Initial review is 30 days after which application is deemed complete or additional information is requested. |
| | | | | If project would impact more than 0.5 acres a regional or individual permit may be required. | Regional or Individual Permit: Same requirements as NWP as well as preparation and submittal of 404(b)(1) Alternatives analysis which identifies the Least Environmentally Damaging Practicable Alternative (LEDPA). Public notice also required. | Regional or Individual Permit: An additional three to six months may be required on top of the nine months expected for an NWP. A 30 day public notice is also required to inform the public about the project before the Corps issues the permit. |
| US Department of Agriculture (USDA), USFS | Special Use Permit | National Forest Management Act/NEPA | National Forest lands | Use of federal lands managed by the USDA Forest Service for a transmission line. Typically constitutes a Major Federal Action which in turn triggers NEPA analysis. | Special Use Permit Application: prepare a special use application for consideration by the Forest Service. Prior to submitting a proposal, applicant is required to arrange a preapplication meeting at the local Forest Service office. Application typically includes | Review of Special Use Permit applications is often dependent upon what level of NEPA analysis is required. An EA is typically 9-12 months, and EIS is generally 18 months. NEPA process may occur concurrently with CEQA process. |

**Table 3.10-1. Anticipated Permits and Approvals**

| Agency | Permit | Regulation | Protected Resource | Trigger | Application Process | Timing |
|---|---|---|---|---|---|---|
| | | | | | project plan, operating plans, liability insurance, licenses/registrations and other documents. If it is determined that NEPA is required either an Environmental Assessment (EA) or Environmental Impact Statement (EIS) would be prepared. The NEPA document may be prepared jointly with the CEQA document. | |
| State Water Resources Control Board (SWRCB)/ RWQCB) | Section 401 Water Quality Certification (WQC), and Section 402 NPDES permit | Clean Water Act, Porter-Cologne Water Quality Control Act | Waters of the state | Potential impacts to state water quality standards | A request for 401 WQC is prepared and submitted by the RWQCB. Information required is nearly identical to information required for 404 Permit. | Preparation of the 401 WQC application is concurrent with preparation of Corps permit material. Issuance occurs approximately three to six months from the time the application is deemed complete depending on the level of impacts to waters of the state. Since RWQCB is also required to review CEQA document for consistency, permits cannot be issued until Notice of Determination (NOD) is filed. |
| | Section 402 National Pollutant Discharge Elimination System (NPDES), Construction General Permit (CGP) | Clean Water Act | Waters of the US | Required if a project will disturb 1 acre or more of soil. | The SWRCB CGP process requires developers to notify the SWRCB of the construction activity by providing a Notice of Intent, developing a SWPPP, and implementing water quality monitoring activities as required. | Once the Permit Registration Documents (PRDs) have been submitted to the SWRCB and the permit fee payment has been made, it takes approximately one week to obtain the Waste Discharger Identification Number (WDID). Soil disturbing activities may not commence until the WDID is obtained. |

**Table 3.10-1. Anticipated Permits and Approvals**

| Agency | Permit | Regulation | Protected Resource | Trigger | Application Process | Timing |
|---|---|---|---|---|---|---|
| California Department of Fish and Wildlife (CDFW) | Section 1602 Lake and Streambed Alteration Agreement (LSAA) | California Fish and Game Code (CFGC) | All perennial, intermittent, and ephemeral rivers, streams, and lakes in the state | Required if a project will: 1) substantially obstruct or divert the natural flow of a river, stream, or lake; 2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. | The information required for the LSAA application is nearly identical to the information required by the Corps, but a separate application and questionnaire are required. | The typical timeline for issuance of a LSAA is approximately three to six months from the time the application is deemed complete and depending upon the level of impact to CDFW jurisdiction. The initial review period for CDFW is 30 days, in which time the application will be deemed complete or incomplete. If the project is deemed incomplete, CDFG will provide a list of additional information necessary to complete the application. Once the application has been deemed complete, CDFW has 60 days to review the information and prepare the draft agreement. Once the draft agreement is issued, the project applicant must review, sign and return it to CDFW for the agreement to be valid. Additionally, CDFW is required to review the CEQA document for consistency and therefore the NOD must be filed before the LSAA will be issued. |
| Federal Agency-USACE and USFS | Section 106 National Historic Preservation Act (NHPA) | National Historic Preservation Act | Cultural Resources | Required if there is a federal undertaking. Requires federal agencies to consider the effects on historic properties of projects they carry out, assist, fund, permit, license, | Information on cultural and historical resources gathered during the draft CEQA/NHPA document preparation. Submit Technical Report to Federal Agency(s). The information is then evaluated by the federal agency for Section 106 | Once SHPO has received the federal agencies determination, it has approximately 30 days to comment and may request additional information. If the project is determined to have an adverse effect to historic properties, resolution of effects |

**Table 3.10-1. Anticipated Permits and Approvals**

| Agency | Permit | Regulation | Protected Resource | Trigger | Application Process | Timing |
|---|---|---|---|---|---|---|
| | | | | or approval. If a federal or federally-assisted project has the potential to affect historic properties, a Section 106 review is required. | compliance. Federal agency makes a determination of effects and consults with tribes and the State Historic Preservation Office (SHPO) to obtain concurrence on determination of effects. If an adverse effect is identified, agency will resolve those effects through continual consultation and a Memorandum of Agreement (MOA). | via an MOA can take 6 or more months. |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| WEAP | **Worker's Environmental Awareness Training Program.** All workers on the project site shall be required to attend a Worker's Environmental Awareness Training Program (WEAP). Training shall inform all construction personnel of the resource protection and avoidance measures as well as procedures to be followed upon the discovery of environmental resources. SCE will be responsible for maintaining WEAP training logs. At a minimum, the logs will contain the name, company, and date of training. These logs will be made available to the CPUC within a month after training is completed. The WEAP training will include, at a minimum, the following topics so crews will understand their obligations:<br>• ESA and other delineated boundaries (e.g. work areas)<br>• Housekeeping (trash and equipment cleaning)<br>• Safety, hazardous materials, and fire management<br>• Work stoppage<br>• Communication protocol<br>• Consequences of non-compliance<br>• Stormwater Pollution Prevention Plan (SWPPP) procedures<br>• Environmental resources procedures (e.g. biological, cultural, and paleontological) | Reduce impacts to natural resources generally. |
| AIR-1 | **Tier 4 Construction Equipment.** All construction equipment with rating between 100 and 750 horsepower (hp) will be required to use engines compliant with U.S. EPA Tier 4 non-road engine standards. In the event a Tier 4 engine is not available for any off-road construction equipment with rating at or higher than 100 hp, that documentation of the unavailability will be provided. | Reduce $NO_x$ emissions. |
| BIO-GEN-1 | **Pre-construction Biological Clearance Surveys and Monitoring.** Pre-construction clearance surveys will be performed by a qualified biologist (i.e., a biologist with the requisite education and experience to address specific resources) to avoid or minimize impacts on special status plants and wildlife species, habitat, nesting birds, and other sensitive biological resources in areas with the potential for resources to be present. Sensitive resources identified during the clearance survey will be either:<br>• Flagged for avoidance,<br>• Moved to outside impact areas,<br>• Avoided by implementing procedures to avoid impacts to individuals while impacting habitat (e.g., burrows, dens, etc.), or<br>• Documented based on permit authorizations.<br><br>Specific details on the pre-construction survey requirements may be found within measures for each individual species.<br><br>Where special-status species (e.g., reptiles, birds, mammals, and bat roosts) or unique resources (defined by regulations and local conservation plans) are known to occur and there is a potential for direct impacts, qualified biologists will monitor construction activities to ensure that impacts to special-status species, sensitive vegetation types, wildlife habitat, and unique resources are avoided and minimized. | Reduce impacts to biological resources generally. |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| BIO-AVI-1 | **Nesting Bird Management Plan.** SCE shall prepare a Nesting Bird Management Plan (NBMP) in coordination with CPUC. The NBMP shall describe methods to minimize potential project effects to nesting birds and avoid any potential for unauthorized take. Project-related disturbance including construction and pre-construction activities shall not proceed within 300 feet of active nests of common bird species or 500 feet of active nests of raptors or special-status bird species (except for golden eagle as described in APM BIO-AVI-3) until approval of the NBMP by CPUC in consultation with CDFW and USFWS.<br><br>**NBMP Content**. The NBMP shall include: (1) definitions of default nest avoidance buffers for each species or group of species, depending on characteristics and conservation status for each species; (2) a notification procedure for buffer distance reductions should they become necessary; (3) a rigorous monitoring protocol, including qualifications of monitors, monitoring schedule, and field methods, to ensure that any project-related effects to nesting birds will be minimized; and (4) a protocol for documenting and reporting any inadvertent contact or effects to birds or nests.<br><br>The paragraphs below describe the NBMP requirements in further detail.<br><br>**Background.** The NBMP shall include the following:<br>• A summary of applicable state and federal laws and regulations, including definition of what constitutes a nest or active nest under state and federal law.<br>• A procedure for amendment of the NBMP, should there be changes in applicable state or federal regulations.<br>• A list of bird species potentially nesting on or near the ROW or other work areas, indicating approximate nesting seasons, nesting habitat, typical nest locations (e.g., ground, vegetation, structures, etc.), tolerance to disturbance (if known) and any conservation status for each species. This section will also note any species that do not require avoidance measures (e.g., rock pigeons).<br>• A list of the types of project activities (construction, operations, and maintenance) that may occur during nesting season, with a short description of the noise and physical disturbance resulting from each activity.<br>• Clearing of any vegetation, site preparation in open or barren areas, or other project related activities that may adversely affect breeding birds shall be scheduled outside the nesting season, as feasible.<br><br>**Pre-construction nest surveys.** Pre-construction nest surveys will be conducted prior to any construction activities scheduled during the breeding period. For this project, the breeding period will be defined as January 1 through August 31. The NBMP shall describe the proposed field methods, survey timing, and qualifications of field biologists. The avian biologists conducting the surveys shall be experienced bird surveyors and familiar with standard nest-locating techniques such as those described in Martin and Guepel (1993). Nest surveys will focus on visual searches for nest locations and observations of bird activities and movement to detect nesting activity (e.g., carrying nest materials or food, territorial displays, courtship behavior). Surveys shall be conducted in accordance with the following guidelines:<br>• Surveys shall cover all potential nesting habitat within the ROW or other work areas within 500 feet of these | Reduce impacts to nesting birds. |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | areas for raptors and 300 feet for non-raptors.<br>• Pre-construction surveys shall be conducted for each work area, no longer than 10 days prior to the start of construction activity. On the first day of construction at any given site, a qualified Avian Biologist will perform a pre-construction "sweep" to identify any bird nests or other resources that may have appeared since the 10-day survey.<br>• SCE shall provide the CPUC a report describing the findings of the pre-construction nest surveys, including the time, date, and duration of the survey; identity of the surveyor(s); a list of species observed; and electronic data identifying nest locations and the boundaries of buffer zones. The electronic data set will be updated following each preconstruction nest survey throughout the nesting season. The format and contents of this report will be described in the draft NBMP and will be subject to review and approval by CPUC.<br><br>**Nest Buffers and Acceptable Activities**<br>The NBMP shall specify measures to delineate buffers on the work site, to consist of clearly visible marking and signage. Buffer locations shall be communicated to the construction contractor and shall remain in effect until formally discontinued (when each nest is no longer active). In addition, the NBMP shall specify measures to ensure the buffers are observed, including a direct communication and decision protocol to stop work within buffer areas. In some cases, active nests may be found while work is underway. Therefore, the NBMP shall include a protocol for stopping ongoing work within the buffer area, securing the work site, and removing personnel and equipment from the buffer.<br><br>The NBMP shall describe proposed measures to avoid take or adverse effects to nests, such as buffer distances from active nests. These measures shall be based on the specific nature of the bird species and conservation status, and other pertinent factors. The NBMP will identify bird species (or groups of species) that are relatively tolerant or intolerant of human activities and specify smaller or larger buffer distances as appropriate for each species. If no information is available to specify a buffer distance for a species, then the NBMP shall specify 300 feet as a standard buffer distance, and 500 feet for raptors and special-status species. All applicable avoidance measures, including buffer distances, must be continued until nest monitoring (below) confirms that the nestlings have fledged and dispersed, or the nest is no longer active. For each special-status species potentially nesting within or near project work areas, the NBMP shall specify applicable buffers and any additional nest protection measures, specialty monitoring, or restrictions on work activities, if needed.<br><br>The NBMP shall identify acceptable work activities within nest buffers (e.g., pedestrian access for inspection or BMP repair) including conditions and restrictions, and any monitoring required. The NBMP shall include pictorial representation showing buffer distances for ground buffers, vertical helicopter buffers, and horizontal helicopter buffers for nests near the ground and nests in towers. | |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | **Nest Buffer Modification or Reduction**<br>At times, SCE or its contractor may propose buffer distances different from those approved in the NBMP. Buffer adjustments shall be reviewed and recommended by a qualified avian biologist, who has been approved by CPUC in consultation with the CDFW and USFWS. The NBMP shall provide a procedure and timing requirements for notifying CPUC, CDFW, and USFWS of any planned adjustments to nest buffers. Separate and distinct procedures will be provided for special-status birds. The NBMP will list the information to be included in buffer reduction notifications in a standardized format.<br>**Nest deterrents**<br>The NBMP shall describe any proposed measures or deterrents to prevent or reduce bird nesting activity on project equipment or facilities, such as buoys, visual or auditory hazing devices, bird repellents, securing of materials, and netting of materials, vehicles, and equipment. It shall also include timing for installation of nest deterrents and field confirmation to prevent effects to any active nest; guidance for the contractor to install, maintain, and remove nest deterrents according to product specifications; and periodic monitoring of nest deterrents to ensure proper installation and functioning and prevent injury or entrapment of birds or other animals. In the event that an active nest is located on project facilities, materials or equipment, SCE will avoid disturbance or use of the facilities, materials, or equipment (e.g., by red-tag) until the nest is no longer active.<br>**Communication**<br>The NBMP shall specify the responsibilities of construction monitors in regards to nests and nest issues, and specify a direct communication protocol to ensure that nest information and potential adverse impacts to nesting birds can be promptly communicated from nest monitors to construction monitors, so that any needed actions can be taken immediately.<br>The NBMP shall specify a procedure to be implemented following accidental disturbance of nests, including wildlife rehabilitation options. It also shall describe any proposed measures, and applicable circumstances, to prevent take of precocial young of ground-nesting birds such as killdeer or quail. For example, chick fences may be used to prevent them from entering work areas and access roads. Finally, the NBMP will specify a procedure for removal of inactive nests, including verification that the nest is inactive and a notification/approval and approval process prior to removal.<br>**Monitoring**<br>SCE shall be responsible for monitoring the implementation, conformance, and efficacy of the avoidance measures (above). The NBMP shall include specific monitoring measures to track any active bird nest within or adjacent to project work areas, bird nesting activity, project-related disturbance, and outcome of each nest. For nests with reduced buffers, SCE shall monitor each nest until nestlings have fledged and dispersed or until the nest becomes inactive. Nests with default buffers do not require further monitoring once construction work is completed in the area. New nests discovered after work completion in an area will not require monitoring. In addition, monitoring shall include | |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | pre-construction surveys, daily sweeps of work areas and equipment, and any special monitoring requirements for particular activities (tree trimming, vegetation removal, etc.) or particular species (noise monitoring, etc.). Nest monitoring shall continue throughout the breeding season during each year of the project's construction activities.<br><br>**Reporting**<br><br>Throughout the construction phase of the project, nest locations, project activities in the vicinity of nests (including helicopter routes), and any adjustments to buffer areas shall be updated and available to CPUC monitors on a daily basis in the Field Reporting Environmental Database (FRED). All buffer reduction notifications and prompt notifications of nest-related non-compliance and corrective actions will be made via email to CPUC monitors. In addition, the NBMP shall specify the format and content of nest data to be provided in regular monitoring and compliance reports. At the end of each year's nest season, SCE will submit an annual NBMP report to the CPUC, CDFW, and USFWS.<br><br>**Implementation locations:** Project-wide | |
| BIO-AVI-2 | **Burrowing Owl**<br><br>**Conduct surveys and avoidance for burrowing owl.**<br><br>Burrowing owl surveys shall be conducted in accordance with the most current CDFW guidelines (CDFG, 2012; or updated guidelines as they become available). SCE shall take measures to avoid impacts to any active burrowing owl burrow within or adjacent to a work area. The default buffer for a burrowing owl burrow is 300 feet for ground construction, and 300 feet horizontal and 200 feet vertical for helicopter construction. The Nesting Bird Management Plan will specify a procedure for adjusting this buffer, if needed. Binocular surveys may be substituted for protocol field surveys on private lands adjacent to the project site only when SCE has made reasonable attempts to obtain permission to enter the property for survey work but was unable to obtain such permission.<br><br>If active burrowing owl burrows are located within project work areas, SCE may passively relocate the owls, by preparing and implementing a Burrowing Owl Passive Relocation Plan, as described below. SCE shall prepare a draft Burrowing Owl Passive Relocation Plan for review and approval by CPUC in consultation with CDFW and USFWS should passive relocation be required. No passive relocation of burrowing owls shall be permitted during breeding season, unless a qualified biologist verifies through noninvasive methods that an occupied burrow is not occupied by a mated pair, and only upon authorization by CDFW. The Plan shall include, but not be limited to, the following elements:<br>• **Assessment of Suitable Burrow Availability.** The Plan shall include an inventory of existing, suitable, and unoccupied burrow sites within 300 feet of the affected project work site. Suitable burrows will include inactive desert kit fox, ground squirrel, or desert tortoise burrows that are deep enough to provide suitable burrowing owl nesting sites, as determined by a qualified biologist. If two or more suitable and unoccupied burrows are present in the area for each burrowing owl that will be passively relocated, then no replacement burrows will need to be built. | Reduce impacts to burrowing owl individuals and habitat. |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | • **Replacement Burrows.** For each burrowing owl that will be passively relocated, if fewer than two suitable unoccupied burrows are available within 300 feet of the affected project work site, then SCE shall construct at least two replacement burrows within 300 feet of the affected project work site, or in suitable locations within 1/4 mile when suitable locations within 300 feet are not available. Burrow replacement sites shall be in areas of suitable habitat (as described in the TLRR Habitat and Sensitive Species Report for the GKR Project) for burrowing owl nesting, and subject to minimal human disturbance and access. The Plan shall describe measures to ensure that burrow installation or improvements will not affect sensitive species habitat (as described in the TLRR Habitat and Sensitive Species Report for the GKR Project) or any burrowing owls already present in the relocation area. The Plan shall provide guidelines for creation or enhancement of at least two natural or artificial burrows for each active burrow within the project disturbance area, including a discussion of timing of burrow improvements, specific location of burrow installation, and burrow design. Design of the artificial burrows shall be consistent with CDFW guidelines (CDFG, 2012; or more current guidance as it becomes available) and shall be approved by the CPUC, CDFW, and USFWS.<br>• **Methods.** Provide detailed methods and guidance for passive relocation of burrowing owls, outside the breeding season. An occupied burrow may not be disturbed during the nesting season (generally, but not limited to, February 1 to August 31), unless a qualified biologist determines, by non-invasive methods, that it is not occupied by a mated pair. Passive relocation will include installation of one-way doors on burrow entrances that will let owls out of the burrow but will not let them back in. Once owls have been passively relocated, burrows will be carefully excavated by hand and collapsed by, or under the direct supervision, of a qualified biologist.<br>• **Monitoring and Reporting.** Describe monitoring and management of the replacement burrow site(s), and provide a reporting plan. The objective shall be to manage the relocation area for the benefit of burrowing owls, with the specific goal of maintaining the functionality of the burrows for a minimum of two years. Monitoring reports shall be available to the CPUC on a weekly basis.<br><br>**Implementation locations:** APM BIO-AVI-2 will be implemented throughout the project area prior to the start of construction during the winter burrowing season. | |
| BIO-AVI-3 | **Golden Eagle**<br><br>**Avoid and minimize impacts.** All project activities located within areas identified as habitat (as described in the TLRR Habitat and Sensitive Species Report for the GKR Project) shall implement the following avoidance and minimization measures.<br>• Golden eagle nest surveys will be performed when construction activities are scheduled to occur in or near golden eagle nesting habitat from January 1-July 31 to determine if any eagle nests are active within a 1-mile radius. Ground-based or helicopter-based survey methods will be developed in coordination with USFWS and will be consistent with current USFWS survey guidelines.<br>• For construction activity, should an active golden eagle nests be present, the nest shall receive a 1-mile buffer if in line of sight, 0.5 mile buffer if no line of sight—with USFWS concurrence. | Avoid impacts to golden eagle. |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | Buffers and buffer modifications for golden eagles will be addressed in the Project Nesting Bird Management Plan (BIO-AVI-1). | |
| BIO-HERP-5 | **Tehachapi Slender Salamander**<br><br>**Pre-construction survey/Construction monitoring.** Prior to initial ground-disturbing activities, a qualified Tehachapi Slender Salamander (TSS) biologist will conduct focused surveys within areas identified as habitat for this species. Biological monitors shall monitor construction activities impacting areas identified as occupied or potentially occupied TSS habitat. If TSS are observed and relocation is required, SCE will obtain the necessary permits or authorizations to relocate salamander individuals to the closest habitat area containing talus, as required by California Department of Fish and Wildlife (CDFW) in applicable permits or habitat conservation plans.<br><br>**Avoid and minimize impacts**. All project activities located within areas identified as TSS habitat shall implement the following avoidance and minimization measures:<br>• Limited Operating Period. If occupied habitat is identified, no construction activities will occur during the TSS active period, February through April, in work areas impacting TSS occupied habitat.<br>• Project activities occurring in habitat located within oak woodlands and ravines shall avoid displacing rocks, logs, bark, and other debris in thick leaf litter, near talus slopes.<br>Trapped Animal Prevention. All auger holes, trenches, pits, or other steep-sided excavations that may pose a hazard to TSS will be either constructed with escape ramps (earthen or wooden) or securely covered when unattended to prevent entrapment. At the start and end of each workday, and just before backfilling, all excavations will be inspected for trapped animals. If found, trapped animals will be removed by the qualified biologist and relocated to outside the Project footprint, as required in all applicable permits or habitat conservation plans. | Avoid and minimize impacts to Tehachapi slender salamander. |
| BIO-HERP-7 | **Blunt-nosed Leopard Lizard**<br><br>**Pre-construction survey/Construction monitoring.** Prior to initial ground-disturbing activities, a qualified blunt-nosed leopard lizard biologist will conduct surveys within areas identified as habitat for this species. The qualified blunt-nosed leopard lizard biologist shall be experienced in conducting surveys for the species, be able to identify suitable habitat for the species, and identify sympatric species.<br><br>One pre-construction survey shall be conducted within 14 days of construction by a qualified biologist(s) and an additional pre-construction survey shall be completed within 24 hours to the onset of construction. The biologist(s) will identify and clearly mark the location of areas where any blunt-nosed leopard lizard were observed. If a blunt-nosed leopard lizard is observed within the project site, U.S. Fish and Wildlife Service and California Department of Fish and Wildlife will be contacted to establish avoidance measures. If construction stops for longer than 2 weeks, a preconstruction survey will need to be conducted prior to construction starting again. Surveys will focus on identifying occupied burrows within areas identified as habitat. | Avoid and minimize impacts to blunt-nosed leopard lizard. |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | If blunt-nosed leopard lizard are observed within 50 feet of proposed disturbance areas during the clearance surveys, exclusion fencing shall be installed in such a manner as to segregate blunt-nosed leopard lizard from the construction and to ensure that direct take of the species does not occur. The actual distance from the construction area where exclusion fencing is installed may depend on each construction site, but the fencing will be installed at a maximum 50-foot radius from the outermost edge of the construction impact zone, directed by the qualified biologist. The qualified biologist shall be on site during the fencing installation to ensure that no blunt-nosed leopard lizard are inadvertently impacted during installation.<br>A qualified biologist will monitor all project activities occurring within potentially occupied habitat.<br>**Coordinate with agencies.** If project activities may impact occupied habitat, SCE will consult with CDFW and U.S. Fish and Wildlife Service (USFWS) to determine if additional avoidance measures will be required (e.g., fencing and/or scoping of burrows). | |
| BIO-MAM-2 | **San Joaquin kit fox**<br>**Pre-construction survey/Construction monitoring.** Within 30 days prior to initial ground-disturbing activities, a qualified biologist will conduct surveys within areas identified as habitat for San Joaquin kit fox. Known and potential dens shall be monitored for evidence of kit fox use by placing an inert tracking medium or an infra-red beam camera at the entrance and monitoring for at least five consecutive nights. A qualified biologist will monitor construction activities within occupied kit fox habitat. If SJKF occupancy is determined at a given site during pre-construction surveys, USFWS and CDFW will be consulted for any necessary and unavoidable impacts prior to conducting work.<br>**Agency consultation and den avoidance**<br>If there are known or potential SJKF dens within project impact areas or project activities within den exclusion zone distances, CDFW and U.S. Fish and Wildlife Service (USFWS) will be consulted to ensure project activities will not impact the species.<br>The following exclusion zones will be established for SJKF dens in accordance with the 2011 USFWS Standardized Recommendations for Protection of the San Joaquin Kit Fox:<br>• Potential and atypical dens. An exclusion zone with a minimum radius of 50 feet as measured outward from the entrance or cluster of entrances will be maintained. Potential dens include any hole of any appropriate size for SJKF. Atypical dens may include any man-made structure, pipes, culverts, and similar structures with a diameter of approximately 4-inches or greater.<br>• Known/occupied dens. An exclusion zone with a minimum radius of 100 feet as measured outward from the entrance or cluster of entrances will be maintained.<br>• Natal/pupping dens. If a den is identified as known/occupied during the breeding season (February through September), the den will be demarcated with a 200-foot buffer. | Avoid and minimize impacts to kit fox. |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | • Actions within exclusion zones will be limited to essential vehicle and equipment travel on authorized roads and foot traffic and will be monitored by a qualified biologist.<br><br>No modification to existing occupied or natal dens can occur without authorization from USFWS and/or CDFW and in accordance with the 2011 USFWS Standardized Recommendations for Protection of the San Joaquin Kit Fox. Natal/pupping dens will not be destroyed until the pups and adults have vacated. If a den can be avoided by construction, but the exclusion zone can't be, then the den can have a one-way door installed or the entrance plugged once confirmed not to be occupied; one-way doors will be removed at the end of construction. If a den cannot be avoided by construction, the den might be able to be removed but may require additional mitigation, such as the creation of artificial dens. Dens in which no activity was detected may be closed by a qualified biologist following agency guidelines.<br><br>**Avoid and minimize impacts**. The following avoidance and minimization measures shall be implemented for all project activities located within areas identified as SJKF habitat:<br>• Limited Operating Period. Within occupied SJKF areas, SCE shall restrict work to daylight hours, except during an emergency, in order to avoid nighttime activities when kit fox may be present on access roads.<br>• Disposal of Trash. Trash and food items will be contained in closed containers and removed daily to reduce attractiveness to opportunistic predators.<br>• Pets Prohibited. Employees will not bring pets or other animals to the GKR Project area, unless the animal is ADA compliant.<br>• Vehicle Travel. During construction-related activities, motor vehicles will be limited to maintained roads, designated routes, and areas identified as being permanently or temporarily affected by construction within the Project footprint. Motor vehicle speeds along Project routes and access roads within areas identified as habitat for SJKF will not exceed 20 miles per hour.<br>• Trapped Animal Prevention. All auger holes, trenches, pits, or other steep-sided excavations that may pose a hazard to SJKF will be either constructed with escape ramps (earthen or wooden) or securely covered when unattended to prevent entrapping SJKF. At the start and end of each workday, and just before backfilling, all excavations will be inspected for trapped animals. Any SJKF found will be allowed to escape unimpeded. If a SJKF is trapped and does not leave on its own, a qualified biologist will move the animal according to agency authorizations, if there is no agency authorization, the fox shall not be moved (unless in imminent danger) until the USFWS and/or CDFW has been contacted and further guidance has been received.<br>• Cover Construction Materials. All construction pipes, culverts, or similar structures with a diameter of approximately four (4) inches or greater that are stored for one or more overnight periods will be thoroughly inspected for SJKF before the pipe is subsequently buried, capped, otherwise used or moved in any way. Likewise, all construction equipment with the potential to entrap SJKF (e.g., water buffalos, barrels, bins) will be covered or secured by turning over or tipping on their side to prevent trapping SJKF. All water tanks and | |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | containers will have tight fitting lids and will be checked to ensure the lids are closed and properly secured. Any SJKF found will be allowed to escape unimpeded. If a SJKF is trapped and does not leave on its own, a qualified biologist will move the animal according to agency authorizations, if there is no agency authorization, the fox shall not be moved (unless in imminent danger) until the USFWS and/or CDFW has been contacted and further guidance has been received. | |
| BIO-MAM-3 | **Kangaroo Rat**<br>**Species - Tipton kangaroo rat (TKR)**<br>**Pre-construction survey/Construction monitoring.** Prior to initial ground-disturbing activities, a qualified (permitted kangaroo rat) biologist will conduct surveys within areas identified as potentially suitable habitat for Tipton kangaroo rat. Prior to project activities SCE will provide a map of potentially suitable habitat for Tipton kangaroo rat along the project alignment. Potential burrows will be flagged for avoidance during project activities and provided a 30-foot no-work buffer. All requirements will be followed for any take authorizations granted by USFWS and/or CDFW. A qualified biologist will monitor construction activities within occupied habitat.<br>**Avoid and minimize impacts**. All project activities located within areas identified as occupied TKR habitat shall implement the following avoidance and minimization measures:<br>• Limited Operating Period. SCE shall restrict work to daylight hours, except during an emergency, in order to avoid nighttime activities when TKR may be present on access roads. No night lighting will be used within TKR habitat.<br>• Trash disposal. Trash and food items will be contained in closed containers and removed daily to reduce attracting predators.<br>• Pets Prohibited. Employees will not bring pets or other animals to the GKR Project area, unless the animal is ADA compliant.<br>• Vehicle Travel. During construction-related activities, motor vehicles will be limited to maintained roads, designated routes, and areas identified as being permanently or temporarily affected by construction within the Project footprint. Motor vehicle speeds along Project routes and access roads within habitat for TKR will not exceed 20 miles per hour.<br>• Trapped Animal Prevention. All auger holes, trenches, pits, or other steep-sided excavations that may pose a hazard to TKR will be either constructed with escape ramps (earthen or wooden) or securely covered when unattended to prevent entrapping animals. At the start and end of each workday, and just before backfilling, all excavations will be inspected for trapped animals. Any TKR found will be allowed to escape unimpeded. If a TKR is trapped and does not leave on its own, a qualified biologist will move the animal according to agency authorizations, if there is no agency authorization, the TKR shall not be moved (unless in imminent danger) until the relevant agency has been contacted and further guidance has been received. | Avoid and minimize impacts to Tipton kangaroo rat. |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | • Cover and Inspect Construction Materials. All construction pipes, culverts, or similar structures with a diameter of approximately 1 inches or greater that are stored for one or more overnight periods will be thoroughly inspected for TKR before the pipe is subsequently buried, capped, otherwise used or moved in any way. If a TKR is discovered inside construction material and does not leave on its own, the materials shall not be moved until the relevant agency has been contacted and further guidance has been received. Any kangaroo rat found will be allowed to escape unimpeded. | |
| BIO-MAM-6 | **Bats, common and sensitive species**<br>**Pre-construction Surveys.** A qualified bat biologist will conduct surveys before the start of construction to identify active bat roosting or maternity colonies within or adjacent to project impact areas. Trees, rock outcrops, caves, and mines with bat roost potential will be assessed for the presence of bats during the maternity season (April 15 - August 15) or winter torpor season (October 31 - February 15). For the maternity season, a one-night visual emergence survey during acceptable weather conditions (e.g., no rain or high winds, night temperatures >45F) may be employed to determine presence. Alternatively, the roost can be physically examined if conditions permit (e.g., remote cameras or lift equipment).<br>High-value habitat features (large tree cavities, crevices, bark fissures, basal hollows, loose or peeling bark, larger snags, palm trees with intact thatch, mines, rock outcrops, buildings, etc.) will be identified and the area around these features searched for bats and bat sign (guano, culled insect parts, staining, etc.). Riparian woodland, orchards, and stands of mature broadleaf trees shall be considered potential habitat for solitary foliage roosting bat species, such as the solitary western red bat and western yellow bat.<br>If no roosts (maternity, wintering, or otherwise) are present, tree trimming/removal may continue as planned. If an active roost has been identified or lasiurine bats are present, removal of trees around the roost would be conducted between September 15 - October 30, and February 15 - April 15, which corresponds to time periods when bats are active, not in torpor, and not caring for non-mobile young.<br>Removal of trees requires the following two-step process prior to trimming/removal:<br>• On Day 1 under the supervision of a qualified bat biologist, Step 1 would include branches and limbs with no cavities removed by hand (e.g., using chainsaws). This would create a disturbance (noise and vibration) and physically alter the tree. Bats roosting in the tree would either abandon the roost immediately (rarely) or, after emergence, would avoid returning to the roost.<br>• On Day 2, Step 2 of the tree removal may occur, which would be removal of the remainder of the tree. Trees that are only to be trimmed and not removed would be processed in the same manner; if a branch with a potential roost must be removed, all surrounding branches would be trimmed on Day 1 under supervision of a qualified bat biologist and then the limb with the potential roost would be removed on Day 2. | Avoid and minimize impacts to special-status bats and habitat. |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | **Construction Monitoring**. If a colonial or solitary maternity roost was located, tree/structure removal will be avoided between April 15 and August 15 (the maternity period) to avoid impacts to active maternity roosts (reproductively active females and dependent young). A qualified biologist will determine the appropriate buffer area around active nest(s) and provisions for buffer exclusion areas. Unless restricted by the qualified biologist, construction vehicles will be allowed to move through a buffer area with no stopping or idling. The qualified biologist will determine, evaluate, and modify buffers as appropriate based on species tolerance and behavior, the potential disruptiveness of construction activities, and existing conditions. Furthermore, the roost will be monitored to determine activity. Roost monitoring will be conducted by qualified biological monitors with knowledge of bat behavior under the direction of a CDFW qualified bat biologist. The qualified biological monitor will observe and document implementation of appropriate buffer areas around active roosts(s) during project activities. | |
| BIO-RES-1 | **Develop and Implement Habitat Restoration and Revegetation Plan (HRRP).** Temporary impacts to regulated species' habitats, plant species, and vegetation communities shall be restored or revegetated. Regulated species and vegetation communities include all species designated as threatened, endangered or rare, sensitive, or of concern by resource or land agencies. Species and vegetation communities that require restoration and revegetation will be determined by the resource agencies through the permitting process.<br><br>SCE will develop and implement a Habitat Restoration and Revegetation Plan (HRRP). SCE will consult with appropriate agencies during development of the HRRP and implement the HRRP in conjunction with applicable permit conditions and mitigation measures. The HRRP will be submitted to CPUC for review and approval prior to the start of construction. Invasive plant management will be performed in conjunction with the HRRP per the Invasive Plant Management Plan (BIO-RES-2).<br><br>**Habitat Restoration and Revegetation Plan**<br>For all revegetation or restoration sites, the HRRP will include:<br>• Revegetation and restoration goals and objectives based on vegetation type and jurisdictional status of each site.<br>• Quantitative restoration success criteria.<br>• Implementation details as applicable. Details may include topsoil stockpiling and handling, postconstruction site preparation, soil decompaction and recontouring, planting and seeding palettes to include only native, locally sourced materials with confirmed ability to produce from suppliers, fall or other suitable season-season planting or seeding dates.<br>• Maintenance details, which may include irrigation or hand-watering schedule and equipment, and erosion control.<br>• Monitoring and Reporting, specifying monitoring schedule and data collection methods throughout establishment of vegetation with key indicators of successful or unsuccessful progress, and quantitative criteria values to objectively determine success or failure at the conclusion of the monitoring period. | Restore native habitat. |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | • Adaptive management procedures such as reseeding, re-planting, drainage repairs, adjustments to irrigation schedule, and repair or remediation of sites to meet success criteria on schedule.<br><br>For temporary disturbance in common vegetation or habitat (e.g., creosote bush scrub) or in disturbed areas such as roads or agricultural lands, the goal of the HRRP will be revegetation to minimize spread of invasive plants, dust generation, and soil erosion. For revegetation sites the goals, objectives, and success criteria specified in the HRRP will be limited to requirements of the Storm Water Pollution Prevention Plan (SWPPP) and the Invasive Plant Management Plan (IPMP, APM BIO-RES-2). No additional goals, objectives, or success criteria regarding habitat condition are required for revegetation sites.<br><br>For species and vegetation communities with permit requirements including wetlands and riparian habitats, the goal of the HRRP will be to restore plant species, habitat values, or vegetation communities. For restoration sites the goals, objectives, and success criteria specified in the HRRP will include native species cover and species richness compatible with the specific vegetation and habitat type.<br><br>For all revegetation or restoration areas, if a fire, flood, or other disturbance beyond the control of SCE or CPUC damages the area within the monitoring period, SCE will be responsible for one reseeding or replanting event, as applicable. If a second event occurs, no replacement is required.<br><br>For all revegetation (per SWPPP requirements) or restoration (per the HRRP) areas, seed and/or potted nursery stock of locally native species will be used. The list of plants observed during botanical surveys of the project area will be used as a guide to site-specific plant selection, additional appropriate species may be included.<br><br>Monitoring of the revegetation sites will be conducted according to requirements of the SWPPP, and the IPMP. Monitoring of the restoration sites will continue annually until HRRP success criteria are achieved. SCE will be responsible for implementing adaptive management as needed.<br><br>Reporting of revegetation will be according to requirements of the SWPPP and the IPMP. For all restoration areas, SCE will provide annual reports to the CPUC to verify the total vegetation acreage subject to restoration, areas that have been completed, and areas still outstanding. The annual reports will also include a summary of the restoration and adaptive management activities for the previous year, success criteria progress and completion, and any adjustments to planned activities, for the upcoming year. | |
| BIO-RES-2 | **Develop Invasive Plant Management Plan.** SCE shall prepare and implement an Invasive Plant Management Plan (IPMP). This plan shall include measures designed to avoid the introduction and spread of new nonnative invasive plant species (invasive plants) and minimize the spread of existing invasive plants resulting from project activities. The IPMP shall be submitted to the CPUC and for review and approval prior to the start of construction.<br><br>For the purpose of the IPMP, invasive plants shall include plants that (1) are invasive and rated high or moderate for negative ecological impact in the California Invasive Plant Inventory Database (Cal-IPC, 2006), or (2) aid and | Avoid and minimize introduction of noxious and invasive weeds. |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | promote the spread of wildfires (such as Bromus tectorum (cheatgrass), Brassica tournefortii (Sahara mustard), and Bromus madritensis spp. Rubens (red brome)) or (3) identified by USFS as special concern. The IPMP will be implemented throughout project pre-construction, construction, and restoration phases.<br>**Invasive Plant Management Plan**<br>The IPMP will include the information defined in the following sections:<br>**Assessment.** An assessment of the GKR Project's potential to cause spread or introduction of invasive plants into new areas, or to introduce new invasive plants into the ROW. This section will list known and potential invasive plants occurring on the ROW and in the project region and identify threat rankings and potential for project-related occurrence or spread for each species. This section will identify control goals (e.g., eradication, suppression, or containment) for invasive plants of concern with potential to occur on the ROW.<br>**Pre-construction invasive plant inventory.** SCE shall inventory of all invasive plants of concern in areas (both within and outside the ROW) subject to project-related vegetation removal/disturbance, overland travel (drive and crush), and ground-disturbing activity. The invasive plants inventory area shall also include vehicle and equipment access routes within the ROW and all project staging and storage yards. Invasive plants of concern shall be mapped by area of occurrence and percent cover. The map will be updated with new occurrences at least once a year.<br>**Pre-construction invasive plants treatment.** Invasive plant infestations identified in the pre-construction invasive plants inventory shall be evaluated to identify potential for project-related spread and potential benefits (if any) of pre-construction treatment. Pre-construction treatment will consider the specific invasive plants, potential seed banks, or other issues. The IPMP will identify any infestations to be controlled or eradicated prior to project construction. Control and follow-up monitoring of pre-construction invasive plants treatment sites will follow methods identified in appropriate sections of the IPMP.<br>**Prevention.** The IPMP will specify methods to minimize potential transport of new invasive plant seeds onto the ROW, or from one section of the ROW to another. The ROW may be divided into "weed zones," based on invasive plants of concern in the ROW. The IPMP will specify inspection procedures for construction equipment entering the GKR Project area. Vehicles and equipment may be inspected and cleaned at entry points to specified sections of the ROW, and before leaving work sites where invasive plants of concern must be contained locally. Construction equipment shall be inspected to ensure it is free of any dirt or mud that could contain invasive plant seeds, roots, or rhizomes, and the tracks, outriggers, tires, and undercarriage will be carefully washed, with special attention being paid to axles, frame, cross members, motor mounts, underneath steps, running boards, and front bumper/brush guard assemblies. Other construction vehicles (e.g., pick-up trucks) that will be frequently entering and exiting the site will be inspected and washed on an as-needed basis. Tools such as chainsaws, hand clippers, pruners, etc., shall be cleaned of dirt and mud before entering project work areas. | |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | All vehicles will be washed off-site when possible. If off-site washing is infeasible, on-site cleaning stations (including air washing) will be set up at specified locations to clean equipment before it enters the work area. Wash stations will be located away from native habitat or special-status species occurrences. Wastewater from cleaning stations will not be allowed to run off the cleaning station site. When vehicles and equipment are washed, a daily log must be kept stating the location, date and time, types of equipment, methods used, and personnel present. The log shall contain the signature of the responsible crewmember. Written or electronic logs shall be available to CPUC monitors on request.<br><br>Erosion control materials (e.g., straw bales) must be certified free of invasive plant seed ("weed-free") before they are brought onto the site. The IPMP must prohibit on-site storage or disposal of mulch or green waste that may contain invasive plant material. Mulch or green waste will be removed from the site in a covered vehicle to prevent seed dispersal and transported to a licensed landfill or composting facility.<br><br>The IPMP will specify guidelines for any soil, gravel, mulch, or fill material to be imported into the GKR Project area, transported from site to site within the GKR Project area, or transported from the GKR Project area to an off-site location, to prevent the introduction or spread of invasive plants to or from the GKR Project area.<br><br>**Monitoring.** The IPMP shall specify methods to survey for invasive plants of concern during pre-construction, construction, and restoration phases; and shall specify qualifications of specialists responsible for invasive plant monitoring and identification. It must include a monitoring schedule to ensure timely detection and immediate control of new invasive plant infestations to prevent further spread. Surveying and monitoring for invasive plant infestations shall occur at least two times per year, to coincide with the early detection period for early season and late season invasive plants. The monitoring section shall also describe methods for post-eradication monitoring to evaluate success of control efforts and any need for follow-up control.<br><br>**Control.** The IPMP must specify manual and chemical invasive plant control methods to be employed. The IPMP shall include only invasive plant control measures with a demonstrated record of success for target invasive plants, based on the best available information. The plan shall describe proposed methods for promptly scheduling and implementing control activity when any project-related invasive plant infestation is located (e.g., located on a project disturbance site), to ensure effective and timely invasive plant control. Invasive plant infestations must be controlled or eradicated as soon as possible upon discovery, and before they go to seed, or when appropriate with the goal to prevent further spread. All proposed invasive plant control methods must minimize disturbance to native vegetation, limit ingress and egress to defined routes, and avoid damage to any environmentally sensitive areas (ESAs) identified within or adjacent to the ROW. New infestations by invasive plants of concern will be treated at a minimum of once annually until eradication, suppression, or containment goals are met. Invasive plant occurrences can be considered eradicated when no new seedlings or resprouts are observed for three consecutive years, or a single season where new seedlings or resprouts are observed in reference populations but not at the control site. Invasive plant control efforts may cease when eradication is complete. | |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | Manual control shall specify well-timed removal of invasive plants or their seed heads with hand tools; seed heads and plants must be disposed of in accordance with guidelines from the relevant County Agricultural Commissioners, if such guidelines are available.<br><br>The focus of weed abatement will be manual control. Chemical controls will be avoided. If chemical controls are indicated for specific invasive species, the following guidelines shall be followed.<br><br>The chemical control section must include specific and detailed plans for any herbicide use. It must indicate where herbicides will be used, which herbicides will be used, and specify techniques to be used to avoid drift or residual toxicity to native vegetation or special-status plants, consistent with the National Invasive Species Management Plan (NISC, 2008). All herbicide applications will follow U.S. Environmental Protection Agency label instructions and will be in accordance with federal, state, and local laws and regulations. Only state-approved herbicides may be used. Herbicide treatment will be implemented by a Licensed Qualified Applicator. Herbicides shall be applied in accordance with product labels and applicator licenses. Herbicides shall not be applied during or within 24 hours of high confidence predicted rain. Only water-safe herbicides shall be used in riparian areas or within channels (engineered or not) where they could run off into downstream areas. Herbicides shall not be applied in high wind conditions.<br><br>**Reporting schedule and contents.** The IPMP shall specify reporting schedule and contents of each report. | |
| BIO-BOT-1 | **Special-status Herbaceous Plants.** SCE shall avoid, minimize or mitigate impacts to any state or federally listed or California Rare Plant Rank (CRPR) 1 or 2 herbaceous plants that may be located on the project disturbance areas or surrounding buffer areas.<br><br>**Pre-construction survey.** Pre-construction clearance surveys would be performed by a qualified biologist (i.e., a biologist with the requisite education and experience to address specific resources), which may be chosen from a previously approved CPUC approved biologist, to avoid or minimize impacts on special status plants. Disturbance free buffers for herbaceous species shall be 25-ft from the individual and/or occurrence boundary. These buffers shall be established from the previously conducted focused surveys and preconstruction survey results. If a smaller buffer is required, SCE shall develop and implement site-specific monitoring plan to minimize direct impacts to the species. The plan will be submitted to the CPUC for review and approval.<br><br>In the event of a discovery of previously undescribed species, the boundary of the occurrence will be flagged, avoided, and monitored as discussed above and the CPUC, CDFW, and/or USFWS will be notified.<br><br>**Focused Survey.** For construction areas where focused surveys have not occurred, focused surveys will take place prior to construction. Focused surveys will be conducted consistent with methodology described in the Project Biological Technical Report.<br><br>**Restoration and Mitigation**<br>SCE will implement the following activities; other conflicting permit conditions will supersede the activities below. | Avoid and minimize impacts to special-status plants. |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | • Coordinate with Agencies. Agencies shall approve any impacts to special status plants. Impacts in excess of 10% of any occurrence (defined by CNDDB as all individuals within a ¼ mile of each other) shall be restored or mitigated.<br>• Habitat Restoration and Revegetation. A Habitat Restoration and Revegetation Plan (HRRP) shall address topsoil, plant or propagules salvage, and restoration. A Habitat Mitigation and Management Plan (HMMP) shall address mitigation. Approval of the HRRP by appropriate agencies is required before impacts to special-status plant occurrences are allowed. A draft HMMP will be submitted to the appropriate agencies prior to impacts to special-status plants. For more information see APM BIO-RES-1.<br>• Salvage. SCE shall consult with a qualified restoration ecologist or horticulturist regarding the feasibility and likely success of salvage efforts for each species. If salvage is feasible, based on prior success with similar species, SCE shall include salvage methods in the HRRP. For special-status plants, the goal shall be to preserve existing populations or establish new populations. The HRRP will include at minimum: (a) species and locations of plants identified for salvage; (b) criteria for determining whether a species is appropriate for salvage; (c) the appropriate season for salvage; (d) equipment and methods for collection, transport, and re-planting plants or propagules, to retain intact soil conditions and maximize success; (e) details regarding storage of plants or propagules for each species; (f) location of the proposed recipient site, and detailed site preparation and plant introduction techniques, as applicable; (g) a description of the irrigation, and other maintenance activities, as applicable; (h) success criteria, including specific timeframe for survivorship of each species; and (i) a detailed monitoring program, commensurate with the HRRP goals. Invasive plant control for special-status plants will be addressed in the Invasive Plant Management Plant (IPMP, APM BIO-RES-2).<br>• Off-site compensation. Where restoration is not feasible, SCE shall provide compensation lands consisting of habitat occupied by the impacted CRPR 1 or 2 ranked plant occurrences at a 1:1 ratio of acreage for any occupied habitat affected by the project. Occupied habitat will be calculated on the project site and on the compensation lands as including each special-status plant occurrence. If compensation is selected as a means of mitigating special-status plant impacts, it may be accomplished by purchasing credit in an established mitigation bank, acquiring conservation easements, or direct purchase and preservation of compensation lands. Compensation for these impacts may be "nested" or "layered" with compensation for habitat loss.<br><br>Annual construction monitoring reports shall be submitted to CPUC. Reports shall include, but not be limited to, details of plants or propagules salvaged, stored, and transplanted (salvage and transplanting locations, species, number, size, condition, etc.); adaptive management efforts implemented (date, location, type of treatment, results, etc.); and evaluation of success of transplantation. After construction, salvage status will be described in the HRRP annual report. | |
| BIO-BOT-2 | **Special-status Perennial Plants and Other Species.** SCE shall avoid, minimize or mitigate impacts to sensitive plants and natural communities in the project area, or unique riparian vegetation, that may be located on the project disturbance areas or surrounding buffer areas. | Avoid and minimize impacts to special-status plants and natural communities. |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | **Pre-construction survey.** Pre-construction surveys would be conducted by a qualified specialist to identify any special-status perennial species or other species of tree, shrub, cactus, or yucca in the project area that require restoration or mitigation. Surveys would be consistent with the protocol outlined by California Department of Fish and Wildlife (CDFW) Protocols for Surveying and Evaluating Impacts to Species Status Native Plant Populations and Sensitive Nature Communities (May 2018). Prior to the start of construction, a qualified biologist (i.e., a biologist with the requisite education and experience to address specific resources), which may be chosen from a previously approved CPUC approved biologist, shall complete pre-construction surveys in all habitats to identify individuals or occurrences of sensitive plants and natural communities in the project area, or unique riparian vegetation. Where these species are known to occur, all work shall occur outside a 10-ft buffer. Buffer reductions may occur with the implementation of appropriate minimization measures. A qualified botanist/arborist monitor, with the authority to halt work, shall be present whenever work occurs within reduced buffers for any of these species. If avoidance of listed species is not feasible, SCE will consult with USFWS/CDFW and implement additional measures pursuant to FESA/CESA, if applicable based on the plant's status and jurisdictional location. For any impacted special-status plants that cannot be covered under a FESA/CESA incidental take authorization due to regulatory status and/or jurisdictional location, the restoration and mitigation steps below will be followed.<br><br>In the event of an unexpected discovery of a new species or previously undocumented occurrence, the same steps will be used as discussed above. In addition, when there is an unexpected discovery of a new species, the CPUC, CDFW, and/or USFWS will be notified.<br><br>**Restoration and Mitigation**<br>• Coordinate with Agencies. Agencies shall approve any impacts to the species where applicable based on the plant's status and jurisdictional location.<br>• Habitat Restoration and Revegetation. If individuals of special-status species cannot be avoided, a Habitat Restoration and Revegetation Plan (HRRP) shall address removal or salvage methods, number of individuals to be impacted, and restoration (see BIO-RES-1). A Habitat Mitigation and Management Plan (HMMP) shall address mitigation. Approval of the HRRP by appropriate agencies is required before impacts to the given species is allowed. A draft HMMP will be submitted to the appropriate agencies prior to impacts to the given species.<br>• Salvage. Native Cactus Removal. Most native cactus can be successfully salvaged and transplanted. Therefore, native cactus (excluding chollas in the genus *Cylindropuntia*) shall be avoided or salvaged.<br>• SCE will prepare and implement a HRRP. The goal shall be maximum practicable survivorship of salvaged plants, (i.e., moving plants only once). The HRRP will include at minimum: (a) species and locations of plants identified for salvage; (b) criteria for determining whether an individual plant is appropriate for salvage; (c) the appropriate season for salvage; (d) equipment and methods for collection, transport, and re-planting, to retain intact soil conditions and maximize success; (e) a requirement to mark each plant to identify the north-facing | |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | side prior to transport, and replant it in the same orientation; (f) details regarding storage of plants for each species; (g) location of the proposed recipient site, and detailed site preparation and plant introduction techniques, as applicable; (h) a description of the irrigation and other maintenance activities, as applicable; (i) success criteria, including specific timeframe for survivorship of each species; and (j) a detailed monitoring program, commensurate with the HRRP goals. Invasive plant control for special-status plants will be addressed in the Invasive Plant Management Plant (IPMP, APM BIO-RES-2).<br>• Tree Removal. Tree removal and trimming would be designed to minimize the total number of individual trees removed or significantly trimmed. A qualified arborist would be onsite to make recommendations on trimming and removal. Protection and replacement of trees impacted by project activities would be mitigated consistent with applicable jurisdiction and agency requirements, and included in the HRRP.<br>• Offsite Compensation. If restoration is not feasible, SCE shall provide compensation lands consisting of habitat occupied by the impacted sensitive species at a 1:1 ratio of individuals or acreage, for any occupied habitat affected by the project. Occupied habitat will be calculated on the project site and on the compensation lands as including each special-status plant occurrence. If compensation is selected as a means of mitigating special-status plant impacts, it may be accomplished by purchasing credit in an established mitigation bank, acquiring conservation easements, or direct purchase and preservation of compensation lands. Compensation for these impacts may be "nested" or "layered" with compensation for habitat loss.<br><br>Annual construction monitoring reports shall be submitted to CPUC. Reports shall include, but not limited to, details of individuals or occurrences impacted (removed or salvaged), salvage, temporary storage, if applicable, and final transplant locations, including species, number, size, condition, at a minimum; adaptive management efforts implemented (date, location, type of treatment, results, etc.); and evaluation of success of transplantation. After construction, salvage status will be described in the HRRP annual report. | |
| CUL-1 | **Develop a Cultural Resource Management Plan (CRMP).** SCE will prepare and submit for approval a Cultural Resource Management Plan (CRMP) to guide all cultural resource management activities during project construction. Management of cultural resources will follow all applicable federal and state standards and guidelines for the management of historic properties/historical resources, including as identified or determined through the Section 106 review process. The CRMP will be submitted to the CPUC for review and approval at least 90 days prior to the start of construction. The CRMP will be prepared by a qualified archaeologist who meets the Secretary of Interior's standards for archaeology and include, but not be limited to, the following sections:<br>• Cultural Resources Management Plan: The CRMP will define and map all known NRHP- and CRHR-eligible properties in or within 100 feet (30.5 meters) of the proposed project APE/API. A cultural resources protection plan will be included that details how NRHP- and CRHR-eligible properties will be avoided and protected during construction. Measures will include, at a minimum, designation and marking of Environmentally Sensitive Areas (ESAs), archaeological monitoring, personnel training, and reporting. The plan will also detail | Reduce impacts to cultural resources. |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | which avoidance measures will be used, where and when they will be implemented, and how avoidance measures and enforcement of ESAs will be coordinated with construction personnel.<br>• Cultural Resource Monitoring and Field Reporting: The CRMP will detail procedures for archaeological monitoring and Tribal participation, define the reporting matrix, and establish criteria for when the monitoring effort should increase or decrease if monitoring results indicate that a change is warranted. The CRMP will also include guidelines for monitoring in areas of high sensitivity for the discovery of buried NRHP- and/or CRHR-eligible cultural resources, burials, cremations, tribal cultural resources, or sacred sites.<br>• Unanticipated Discovery Protocol: The CRMP will detail procedures for temporarily halting construction, defining work stoppage zones, notifying stakeholders (e.g. agencies, Native Americans, utilities), and assessing NRHP and/or CRHR eligibility in the event unanticipated discoveries are encountered during construction. It will include methods, timelines for assessing NRHP and/or CRHR eligibility, formulating mitigation plans, and implementing treatment. Mitigation and treatment plans for unanticipated discoveries will be reviewed by tribal stakeholders and approved by the CPUC, prior to implementation.<br>• Data Analysis and Reporting: The CRMP will detail methods for data analysis in a regional context, reporting of results within one year of completion of field studies, curation of artifacts and data (maps, field notes, archival materials, recordings, reports, photographs, and analysts' data) at a facility that is approved by CPUC, and dissemination of reports to appropriate repositories. | |
| CUL-2 | **Avoid Environmentally Sensitive Areas (ESA).** SCE will perform cultural resource surveys for any portion of the proposed project APE/API not yet surveyed (e.g. new or modified staging areas, pull sites, or other work areas). Cultural resources discovered during surveys will be subject to APM CUL-1 (Develop CRMP). Where operationally feasible, all NRHP- and CRHR-eligible resources will be protected from direct project impacts by project redesign (i.e., relocation of the line, ancillary facilities, or temporary facilities or work areas). In addition, all historic properties/historical resources will be avoided by all project construction, operation and maintenance, and restoration activities, where feasible. Avoidance measures will include, but not be limited to, fencing off ESAs for the duration of the proposed project or as outlined in the CRMP. | Reduce impacts to cultural resources. |
| CUL-3 | **Conduct Construction Monitoring.** Archaeological monitoring will occur as outlined in the CRMP. Archaeological monitoring will be conducted by a qualified archaeologist familiar with the types of historic and prehistoric resources that could occur within the project areas. The qualifications of the principal archaeologist and monitors will be approved by the CPUC. Monitoring reports will be submitted to the CPUC on a monthly basis. A Tribal Participant may be required at culturally sensitive locations in consultation with the CPUC and/or as outlined in the CRMP. | Reduce impacts to cultural resources. |
| CUL-4 | **Properly Treat Human Remains.** SCE will follow all federal and state laws, statutes, and regulations that govern the treatment of human remains. All work in the vicinity of a find will cease within a 200-foot radius of the remains, the area will be protected to ensure that no additional disturbance occurs. Should inadvertent discovery of human remains be made on federal lands, the federal agency and county coroner (California Health and Safety Code 7050.5(b)) will be notified immediately. If the remains are determined to be Native American or if Native American cultural items | Reduce impacts to human remains. |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | pursuant to the Native American Graves Protection and Repatriation Act (NAGPRA) are uncovered, the remains will be treated in accordance with the provisions of NAGPRA (43 CFR 10) and the Archaeological Resources Protection Act (43 CFR 7). SCE will assist and support the federal agency, as appropriate, in all required NAGPRA and Section 106 actions, government to-government and consultations with Native Americans, agencies, and consulting parties as requested by the federal agency.<br><br>If the remains are not on federal land, the county coroner and CPUC will be notified immediately and the remains will be treated in accordance with Health and Safety Code Section 7050.5, CEQA Section 15064.5(e), and Public Resources Code Section 5097.98. If the county coroner identifies the remains are Native American, they will notify the California Native American Heritage Commission (NAHC) within 24 hours. If the remains are not believed to be Native American, the appropriate local law enforcement agency will be notified. The NAHC will immediately notify the person or tribe it believes to be the most likely descendant (MLD) of the remains, and the MLD has 48 hours to make recommendations to the landowner or representative for the respectful treatment or disposition of the human remains and any associated grave goods. If the MLD does not make recommendations within 48 hours, the remains will be reinterred in the location they were discovered, and the area of the property will be secured from further disturbance. If there are disputes between the landowner and the MLD, the NAHC will mediate the dispute and attempt to find a solution. If the mediation fails to provide measures acceptable to the landowner, the landowner or their representative will reinter the remains and associated grave goods and funerary objects in an area of the property secure from further disturbance. The location of any reburial of Native American human remains will not be disclosed to the public and will not be governed by public disclosure requirements of the California Public Records Act, Cal. Govt. Code § 6250 et seq., unless otherwise required by law.<br><br>SCE will assist and support the CPUC and NAHC, as appropriate. | |
| CUL-5 | **Cultural Resources Awareness Worker Training.** Prior to initiating construction, all construction personnel will be trained by a qualified archaeologist regarding the recognition of possible buried cultural resources (i.e., prehistoric and/or historical artifacts, objects, or features) and paleontological resources (i.e., fossils), and protection of these resources during construction. Training will also inform all construction personnel of the procedures to be followed upon the discovery of cultural materials. All personnel will be instructed that unauthorized removal or collection of artifacts is a violation of federal and state laws. Any excavation contract (or contracts for other activities that may have subsurface soil impacts) will include clauses that require construction personnel to attend a Worker's Environmental Awareness Training Program (WEAP). The WEAP will include the project's potential for the post-discovery review of archaeological deposits, how to operate adjacent to and avoid all ESAs, and procedures to treat post-discovery reviews. | Reduce impacts to cultural resources. |
| HAZ-1 | **Prepare a Hazardous Materials Management Plan.** SCE will prepare and implement a Hazardous Materials Management Plan (HMMP)/Hazardous Materials Business Plan (HMBP) during project construction. The plan will outline proper hazardous materials handling, use, storage and disposal requirements, as well as hazardous waste management procedures. This plan will be developed to ensure that all hazardous materials and wastes will be handled | Reduce hazardous materials-related impacts. |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | and disposed of according to applicable rules and regulations.<br><br>The HMMP will address the types of hazardous materials to be used during the project, hazardous materials storage, employee training requirements, hazard recognition, fire safety, first aid/emergency medical procedures, hazardous materials release containment/control procedures, hazard communication training, PPE training, and release reporting requirements. It will also include fueling and maintenance procedures for helicopters and construction equipment.<br><br>If on site refueling is necessary, BMPs shall be implemented in accordance with the project SWPPP. Refueling stations and fuel tanks will be located, maintained, and operated during construction in accordance with applicable laws and regulations pertaining to hazardous materials. If more than 1,320 gallons of petroleum products in containers greater than 55-gallons, a SPCC plan must be created prior to products being brought on-site.<br><br>All construction personnel, including environmental monitors, will be made aware of local, state and federal emergency response reporting guidelines for accidental spills. | |
| HAZ-2 | **Prepare a Soil Management Plan**. A Soil Management Plan will be developed and implemented for the proposed project. The Soil Management Plan will provide guidance for the proper handling, on-site management, and disposal of impacted soil that may be encountered during construction activities. The Soil Management Plan will direct that during grading or excavation work, the construction contractor shall observe the exposed soil for visual evidence of contamination. If visual contamination indicators are observed during construction, potentially contaminated soil will be segregated, sampled, and tested to determine appropriate treatment and disposal options. Work in the area of the potentially contaminated soil will be stopped until appropriate measures are determined based on the testing results and are taken to protect human health and the environment. If the soil is classified as hazardous, it will be properly managed on location and transported in accordance with the U.S. Department of Transportation regulations using a Uniform Hazardous Waste Manifest to a Class I Landfill or other appropriate soil treatment or recycling facility. If potentially-contaminated groundwater is encountered, then groundwater samples will be collected and tested to determine appropriate treatment and disposal. Hazardous materials will be transported and disposed of in accordance with applicable rules, regulations, and SCE standard protocols designed to protect the environment, workers, and the public. | Reduce hazardous materials-related impacts. |
| HAZ-3 | **Prepare and Implement a Project-Specific Fire Management Plan.** A Fire Prevention and Emergency Response Plan will be developed to ensure the health and safety of construction workers, SCE personnel, and the public during Project construction. The Plan shall cover:<br>• The purpose and applicability of the plan<br>• Responsibilities and duties<br>• Project areas where the plan applies<br>• Procedures for incorporating Red Flag Warnings, Fire Potential Index (FPI), Project Activity Level (PAL), and equivalent indicators in determining fire weather related work restrictions<br>• Procedures for fire reporting, response, prevention, and evacuation routes<br>• Coordination procedures with federal and local fire officials | Reduce hazardous materials-related impacts and hazard fuel/fire reduction. |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | • Crew training, including fire safety practices and restrictions<br>• Fire suppression and communication equipment required to be on hand during construction<br>• Method for verification that Plan protocols and requirements are being followed<br>• Post-construction fire prevention and response measures<br><br>The Project-specific Fire Prevention and Emergency Response Plan for construction of the project will be prepared by SCE and submitted to CPUC, CALFIRE, Inyo, Kern and San Bernardino counties, and local municipal fire agencies for review at least 30 days prior to initiation of construction. SCE will address all comments received from reviewing agencies and provide the final Fire Prevention and Emergency Response Plan to reviewing agencies for approval prior to initiating construction activities. | |
| NOI-1 | **Noise Disturbance Minimization Procedures.** SCE will employ the following noise-control techniques, at a minimum, to reduce construction noise exposure at noise-sensitive receptors during construction:<br>• Construction activities will be confined to daytime, weekday and weekend hours established by the applicable local jurisdiction. In the event construction is required beyond those hours, SCE will notify the appropriate local agency or agencies regarding the description of the work, location, and anticipated construction hours.<br>• Construction equipment will use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.<br>• Construction traffic and helicopter flight will be routed away from residences and schools, where feasible.<br>• Unnecessary construction vehicle use and idling time will be minimized. If a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. | Reduce noise-related impacts. |
| PAL-1 | **Develop Paleontological Resource Mitigation and Monitoring Plan.** SCE will prepare a Paleontological Resources Mitigation and Monitoring Plan (PRMMP) to guide all paleontological management activities during project construction. The PRMMP will be submitted to the CPUC for review and approval prior to the start of construction. The PRMMP will be prepared by a qualified paleontologist, based on Society of Vertebrate Paleontology (SVP) 2010 guidelines, and meet all regulatory requirements. The qualified paleontologist will have a Master's Degree or Ph.D. in paleontology, have local paleontology knowledge, and will be familiar with paleontological procedures and techniques. The PRMMP will include, but not be limited to, the following sections:<br>1. Paleontological Resource Monitoring and Reporting: Detail monitoring procedures and methodologies, which will require a qualified paleontological monitor for all construction-related ground disturbance that reach approximate depths for significant paleontological resources in sediments with moderate (PFYC 3a) to very high (PFYC 5) and Unknown sensitivity. Sediments of undetermined sensitivity will be monitored on a part-time basis as outlined in the PRMMP. Sediments with very low or low sensitivity will not require monitoring. Paleontological monitors will meet standard qualifications per the SVP (2010).<br>2. Unanticipated Discovery Protocol: Detail procedures for halting construction, defining work stoppage zones, notifying stakeholders, and assessing the paleontological find for scientific significance. If indicators of potential microvertebrate fossils are found, screening of a test sample will be carried out as outlined in SVP 2010. | Reduce impacts to paleontological resources. |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

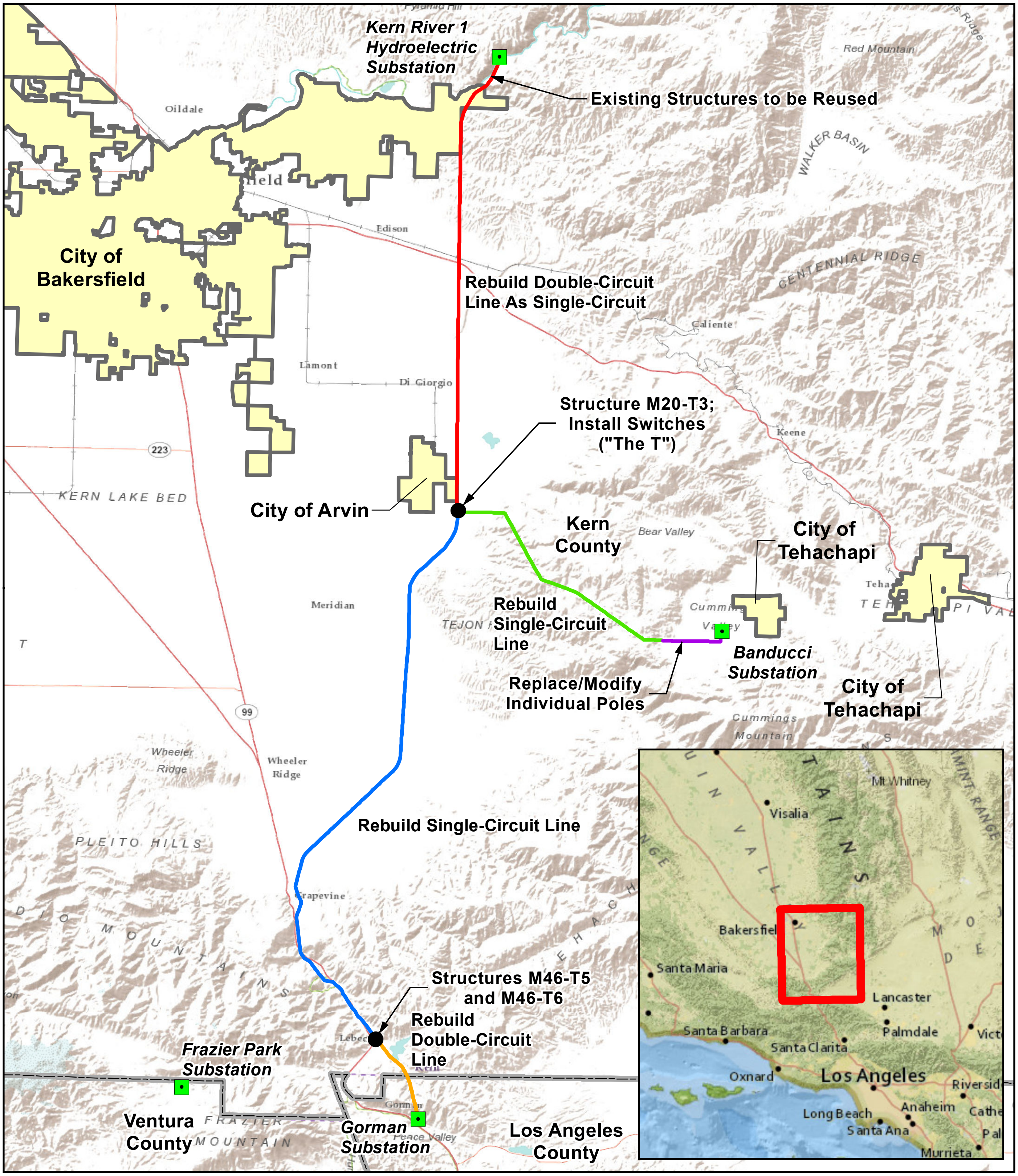
| APM Title | Description | Justification |
|---|---|---|
| | 3. Data Analysis and Reporting: Detail methods for data recovery, analysis in a regional context, reporting of results within one year of completion of field studies, curation of all fossil specimens in an accredited museum repository approved by the CPUC, and dissemination of reports to appropriate repositories. | |
| PAL-2 | **Paleontology Resources Awareness Training.** Prior to the initiation of construction, all construction personnel will be trained regarding the recognition of possible buried paleontological resources (i.e. fossils) and protection of all paleontological resources during construction. Training will inform all construction personnel of the procedures to be followed upon the discovery of paleontological materials. All personnel will be instructed that unauthorized removal or collection of fossils is a violation of Federal and State laws. Any excavation contract (or contracts for other activities that may have subsurface soil impacts) will include clauses that require construction personnel to attend a Worker's Environmental Awareness Training Program (WEAP). The WEAP will include the project's potential for inadvertently exposing buried paleontological resources, how to operate adjacent to and avoid any potential Environmentally Sensitive Area, and procedures to treat unanticipated discoveries. | Reduce impacts to paleontological resources. |
| PAL-3 | **Conduct Paleontology Resources Construction Monitoring.** Paleontological monitoring will be conducted by a qualified paleontologist familiar with the types of resources that could occur within the project area. The qualifications of the principal paleontologist and monitors will be approved by the CPUC. Monitoring reports will be submitted to the CPUC on a monthly basis. | Reduce impacts to paleontological resources. |
| TCR-1 | **Tribal Monitoring.** An archaeological monitor, and tribal monitor that is culturally affiliated with the project area, may be present for all ground-disturbing activities within or directly adjacent to identified TCR(s). The archaeological and tribal monitors will consult the CRMP to determine when to increase or decrease the monitoring effort should the monitoring results indicate a change is warranted. Monitoring reports will be prepared and submitted to the CPUC on a monthly basis. | Reduce impacts to tribal cultural resources. |
| TCR-2 | **Tribal Engagement Plan.** A tribal engagement plan shall be prepared, which will detail how Native American tribes will be engaged and informed throughout the proposed project. The tribal engagement plan will be included in the CRMP (APM CUL-1). | Reduce impacts to tribal cultural resources. |
| TRA-1 | SCE will implement traffic control measures consistent with those published in the Manual on Uniform Traffic Control Devices, as written and amended by Caltrans for the state of California (CA MUTCD) and using standard templates from the California Temporary Traffic Control Handbook (CATTCH) (California Inter-Utility Coordinating Committee 2018). These measures will be implemented as and where necessary as described in the CA MUTCD and/or CATTCH, or in ministerial permits. | Reduce traffic flow-related impacts. |
| TRA-2 | Prior to construction, SCE will consult with the FAA regarding helicopter flight plans that will take place during construction. This consultation will include, but not be limited to:<br>• Providing locations of helicopter construction staging and work areas.<br>• Establishing designated flight corridors between staging and work areas.<br>• Means to ensure external load operations avoid occupied structures and roadways.<br>• Locations of traffic control where external load operations will cross public roadways. | Reduce impacts from helicopter activities. |

**Table 3.11-1. Applicant Proposed Measures**

*NOTE: All reports and reporting included in the following APMs will be made available utilizing SCE's Field Reporting Environmental Database (FRED).*

| APM Title | Description | Justification |
|---|---|---|
| | • Locations where Congested Area Plans may be required for filing with the FAA.<br>• Identifying any flight restrictions recommended/required by the FAA.<br><br>The results of this coordination will be provided to the CPUC. | |
| TRA-3 | Where the proposed project work area encroaches upon a public right-of-way and reduces the existing pedestrian path of travel to less than 48 inches wide, alternate pedestrian routing will be provided during construction activities. | Reduce impacts to pedestrian travel. |
| WET-1 | **Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats.** The project shall avoid and/or minimize impacts to all state and federally jurisdictional waters, wetlands, and riparian habitat that occur within the Project area to the maximum extent feasible. All grading, fill, staging of equipment, infrastructure construction or removal, and all other construction activities shall be designed, sited, and conducted outside of state and federally jurisdictional waters, wetlands, and riparian habitat to the maximum extent feasible.<br><br>The implementation of appropriate Best Management Practices (BMPs) (e.g., silt fencing, straw wattles, secondary containment, avoiding fueling in close proximity to waters, etc.) shall be utilized to ensure that indirect impacts to jurisdictional waters, wetlands and riparian areas are avoided or minimized to the maximum extent feasible. BMPs are also necessary to reduce the risk of an unintended release of sediments or other materials into jurisdictional waters. New and upgraded roadways will use at-grade type stream crossings where possible. Stockpiled and bermed sediment will be redistributed or removed from the site so as not to cause water impoundment or induce hydromodification. New poles will be sited outside stream channels to the extent possible.<br><br>If permanent impacts to waters, wetlands, and riparian habitats are unavoidable, they shall be mitigated for at a minimum of a 1:1 ratio, or at a ratio determined by the applicable Resource or Land-Use Agencies (i.e., U.S. Army Corps of Engineers, the State Water Resources Control Board/Regional Water Quality Control Boards, and California Department of Fish and Wildlife, Bureau of Land Management, etc.). | Reduce impacts to jurisdictional waters, wetlands, and riparian habitats. |

Page intentionally left blank.




## Legend

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Counties
- City Boundary

Substation Modification:
1. Kern River 1 Hydroelectric Substation
2. Gorman Substation
3. Banducci Substation
4. Frazier Park Substation

N

0 6 12

Miles

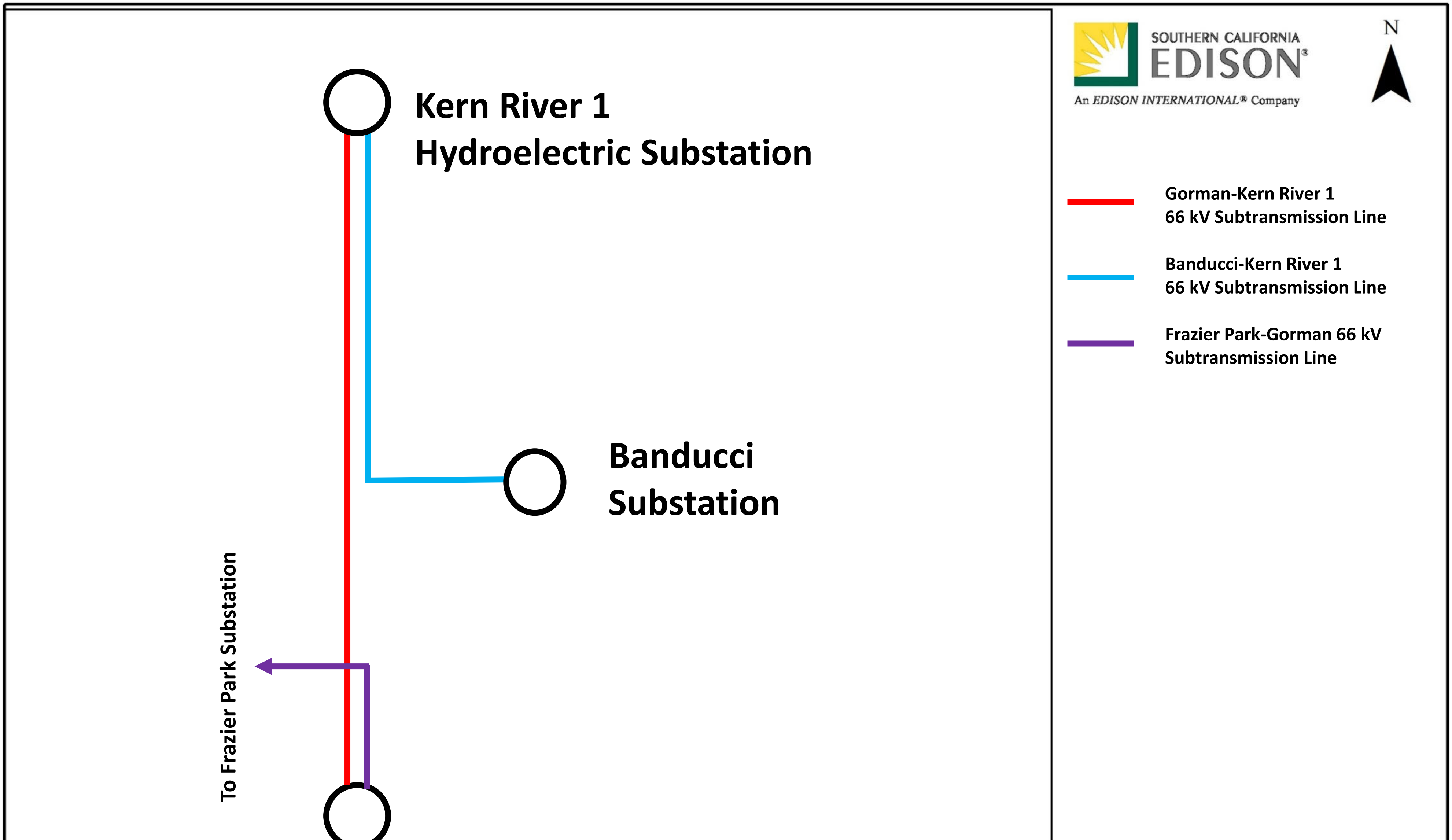
**GORMAN-KERN RIVER 66 kV PROJECT**

**PROJECT OVERVIEW BY SEGMENT**

ARCADIS SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL® Company

FIGURE 3.1-1

T:_ENVSCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure3-1-1_Project_Segments_KERN.mxd 6/18/2021 8:41:42 AM

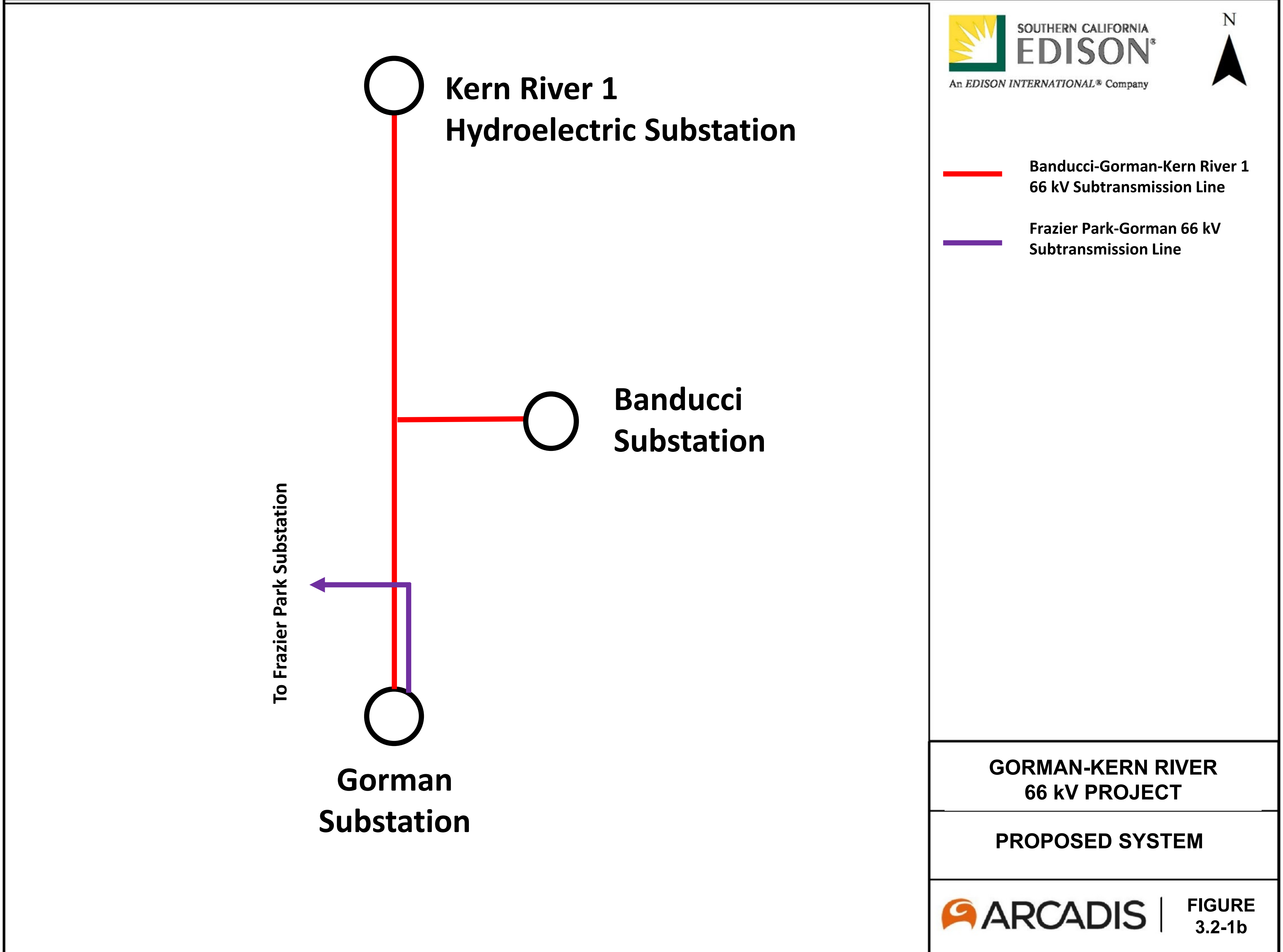



GORMAN-KERN RIVER
66 kV PROJECT

EXISTING SYSTEM

ARCADIS

FIGURE
3.2-1a

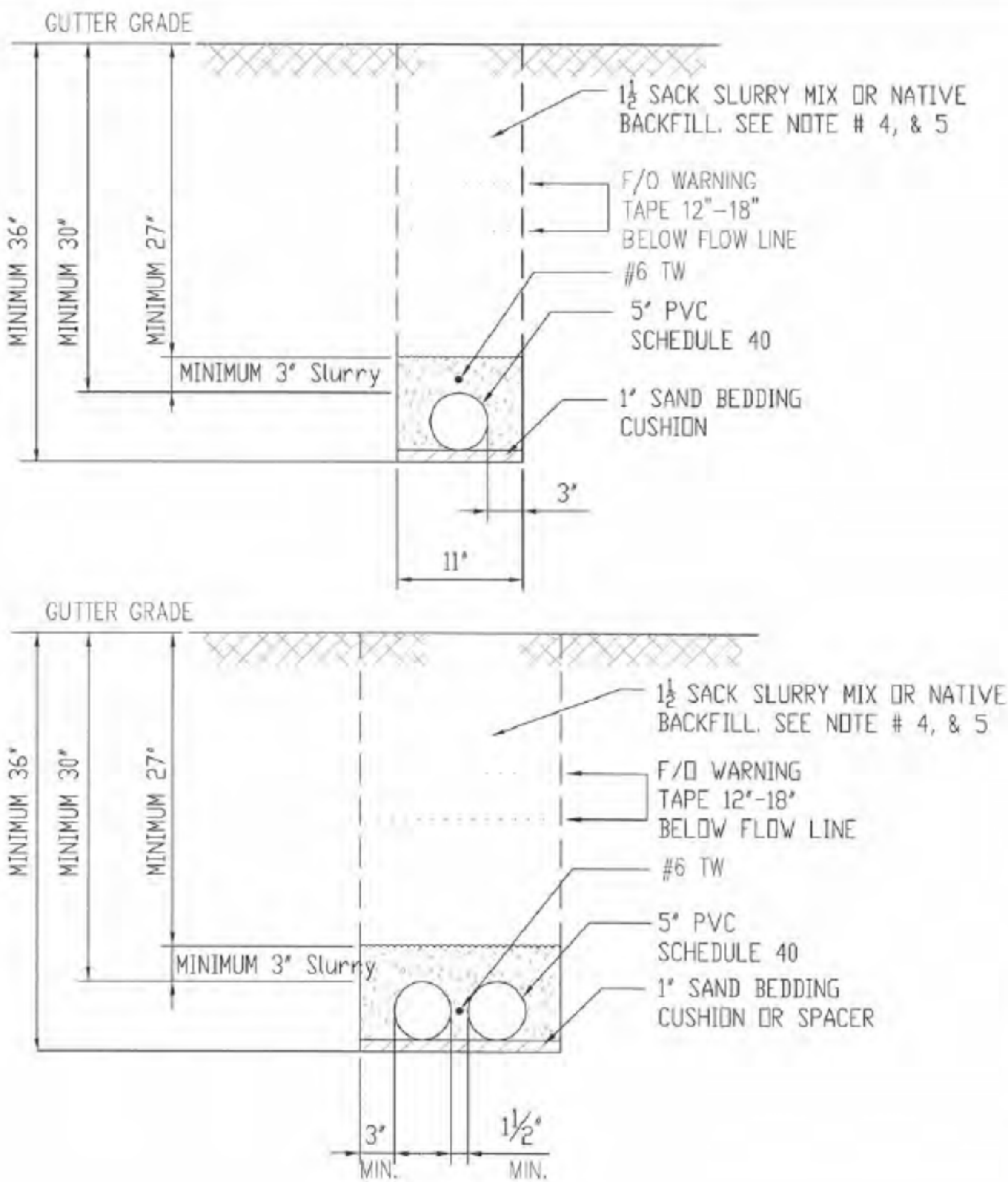



GORMAN-KERN RIVER
66 kV PROJECT

PROPOSED SYSTEM

ARCADIS

FIGURE 3.2-1b



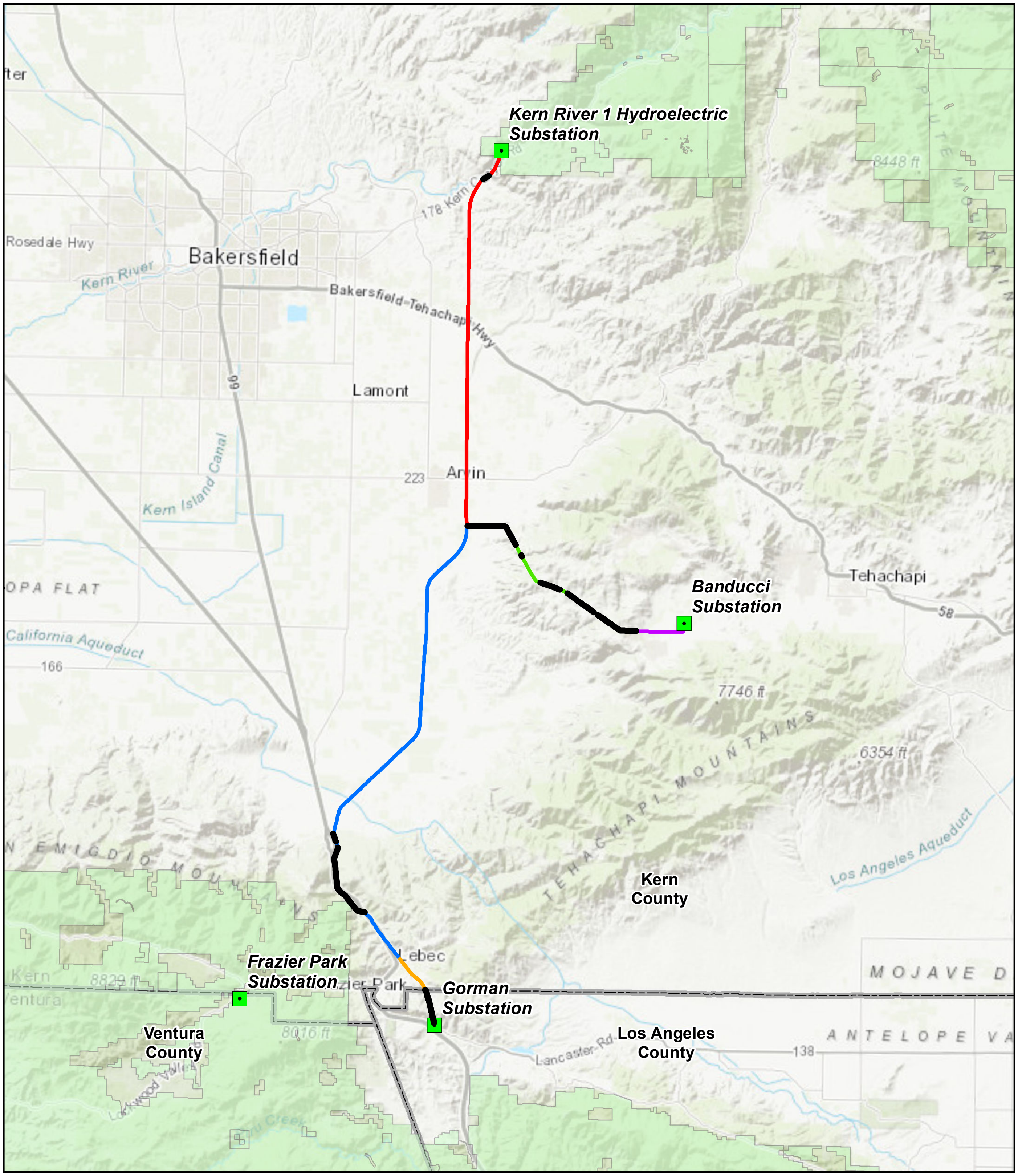

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

**GORMAN-KERN RIVER 66 kV PROJECT**

**TELECOMMUNICATIONS CONDUIT INSTALL DETAILS**

ARCADIS

**FIGURE 3.3-1**




## Legend

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5 (Potential New ROW)
- Parcels Requiring New Easements
- U.S. Forest Service
- Counties

N

0 6 12
Miles

**GORMAN-KERN RIVER 66 kV PROJECT**

**NEW EASEMENTS REQUIRED**

ARCADIS | SOUTHERN CALIFORNIA EDISON — An EDISON INTERNATIONAL® Company

FIGURE **3.4-1**

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure3-4-1_ROW.mxd 12/10/2021 4:18:16 PM


## Legend

- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Staging Area
- Substation
- U.S. Forest Service
- Counties

N

0 5 10
Miles

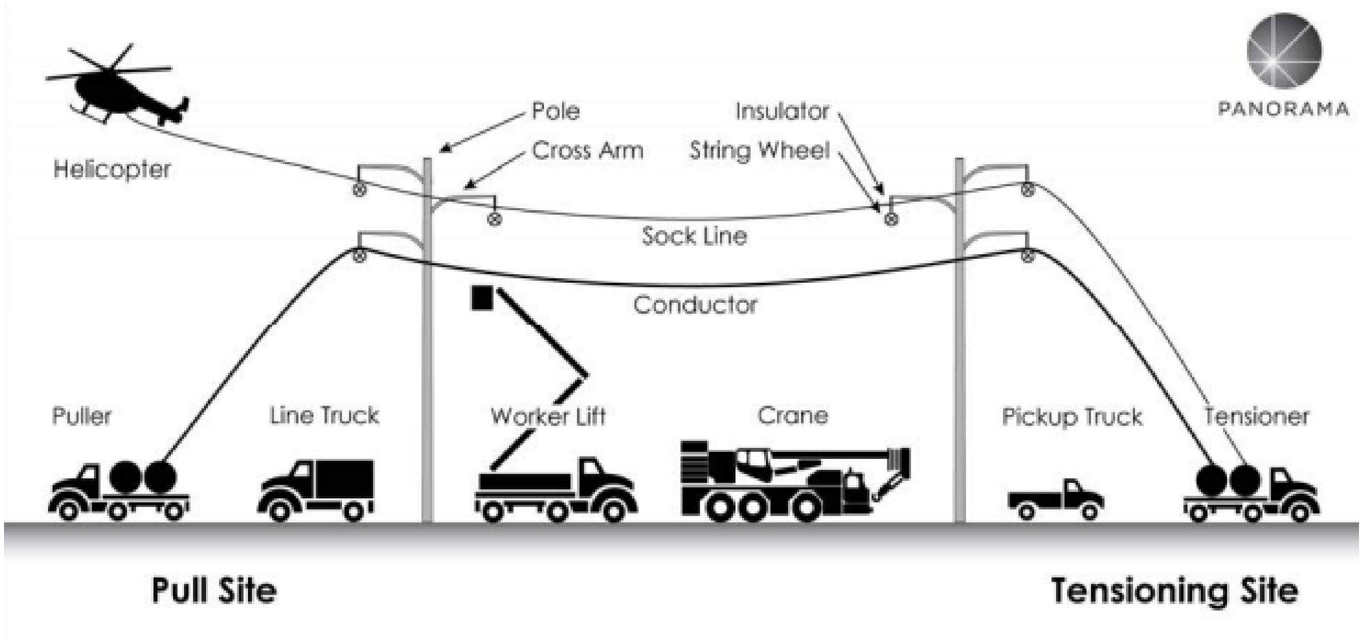
# GORMAN-KERN RIVER 66 kV PROJECT

## STAGING AREAS

ARCADIS
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE
3.5-1

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure3-5-1_Staging_Areas_KERN.mxd 06/14/2021 5:19:48 PM




Source: CPUC 2017

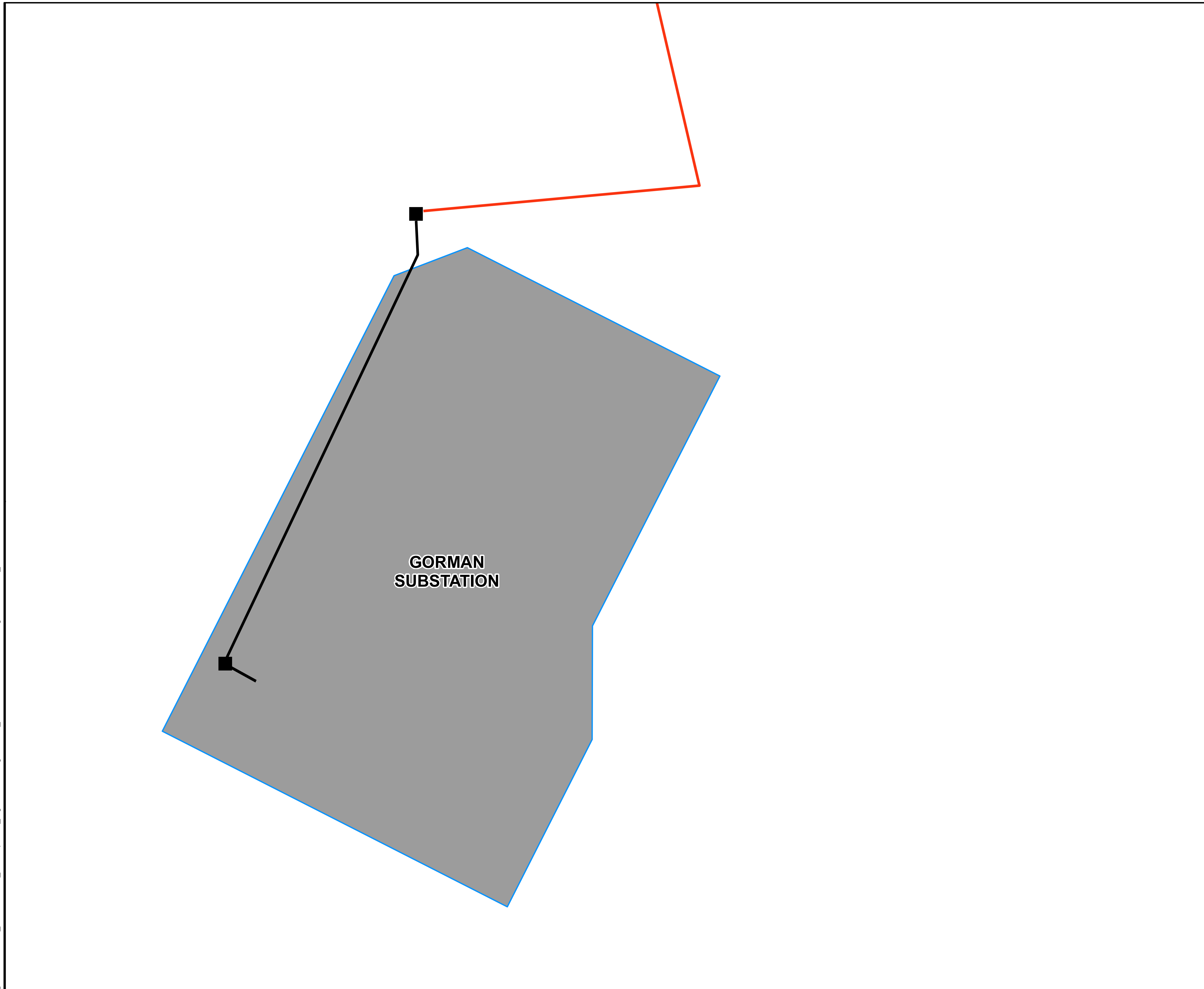
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

**GORMAN-KERN RIVER 66 kV PROJECT**

**TYPICAL PULL-AND-TENSION/ STRINGING SITE SET-UP**

ARCADIS

**FIGURE 3.5-2**




[redacted]

N

Legend:

- Potential Vault/Pull Box Location
- Gorman-Kern River 1 66 kV Subtransmission Line
- Potential Underground Telecommunications Route
- Substation Area

0 30 60
Feet

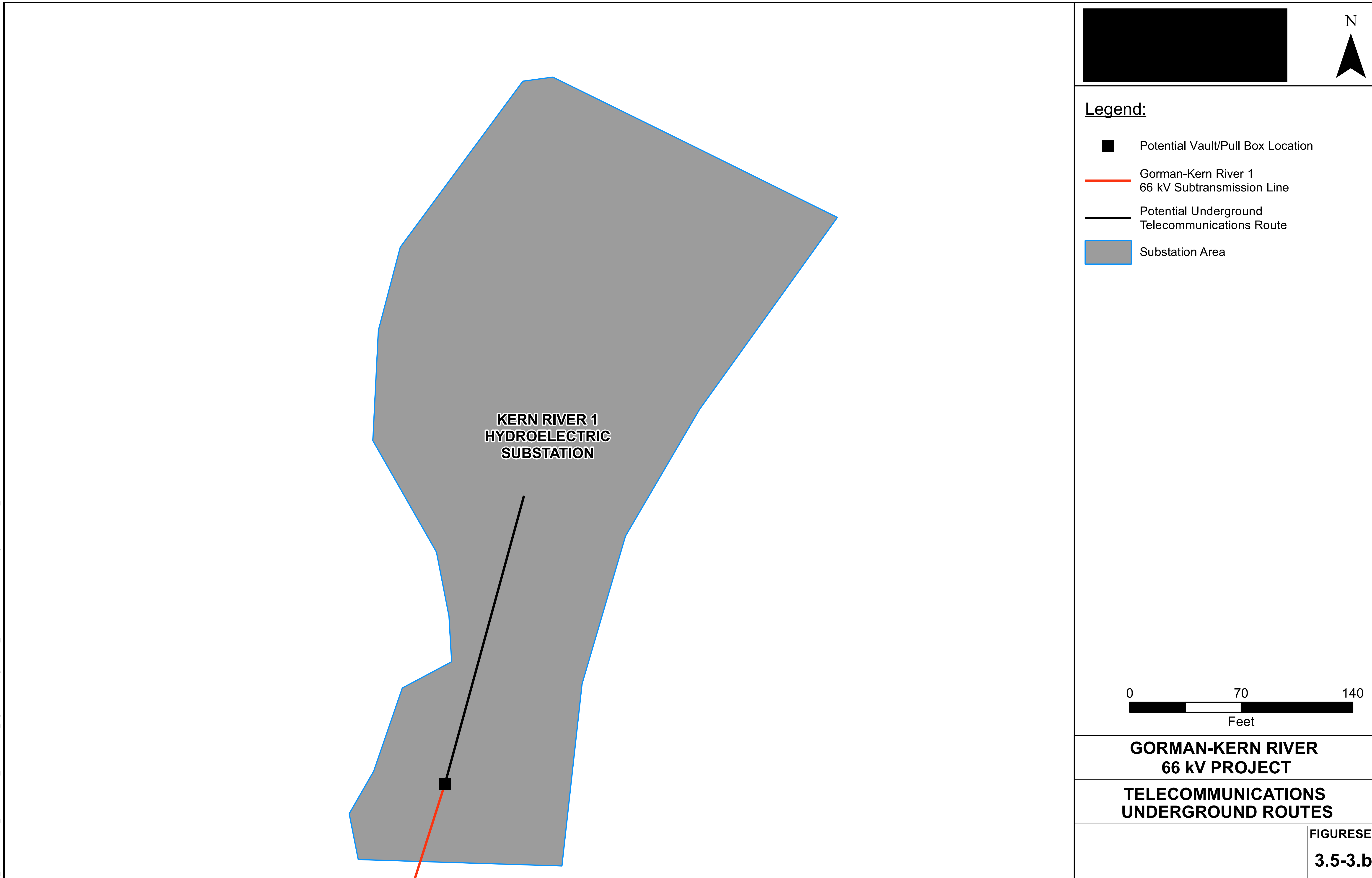
**GORMAN-KERN RIVER 66 kV PROJECT**

**TELECOMMUNICATIONS UNDERGROUND ROUTES**

FIGURESET
**3.5-3.a**

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure3-5-3_TelecommunicationsUndergroundRoutes_KERN.mxd 6/15/2021 9:42:25 PM

[redacted]




Legend:

- Potential Vault/Pull Box Location
- Gorman-Kern River 1 66 kV Subtransmission Line
- Potential Underground Telecommunications Route
- Substation Area

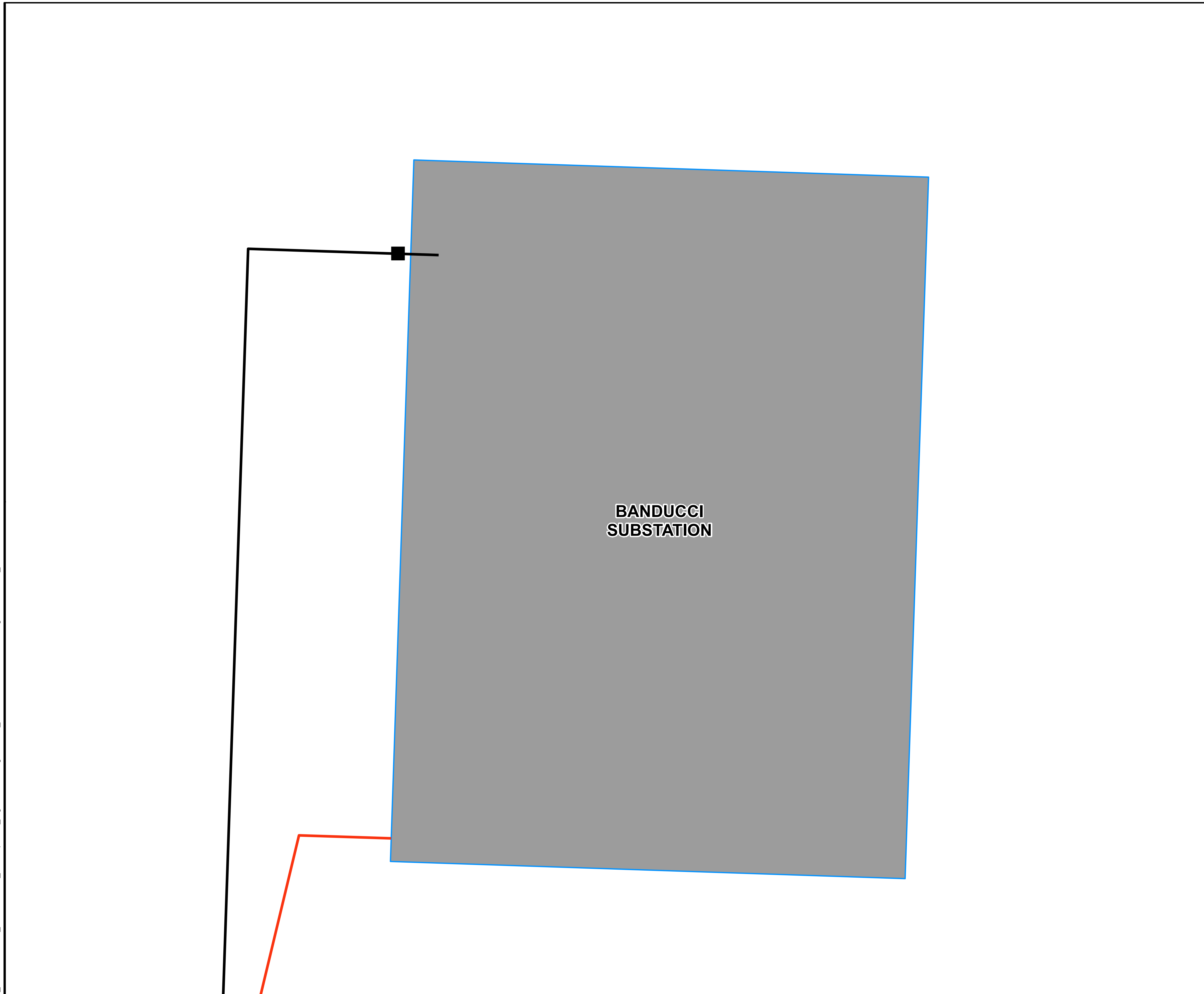
**GORMAN-KERN RIVER 66 kV PROJECT**

**TELECOMMUNICATIONS UNDERGROUND ROUTES**

**FIGURESET**

**3.5-3.b**

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure3-5-3_TelecommunicationsUndergroundRoutes_KERN.mxd 6/15/2021 9:42:25 PM




[redacted]

N

Legend:

- Potential Vault/Pull Box Location
- Banducci-Kern River 1 66 kV Subtransmission Line
- Potential Underground Telecommunications Route
- Substation Area

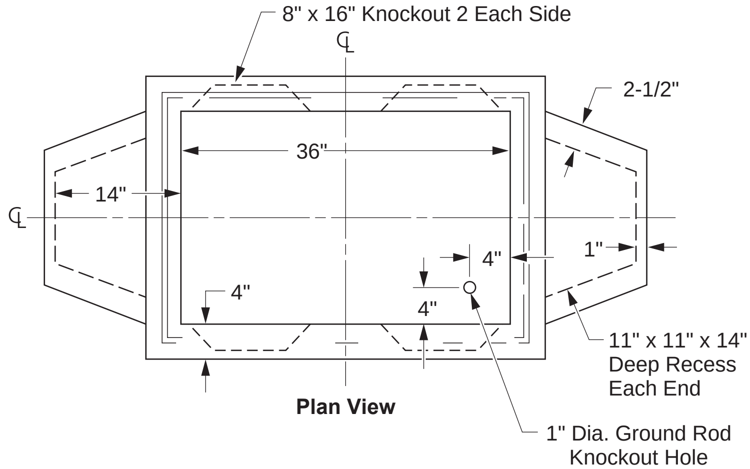
# GORMAN-KERN RIVER 66 kV PROJECT

## TELECOMMUNICATIONS UNDERGROUND ROUTES

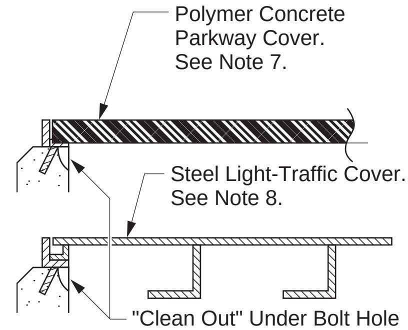
FIGURESET

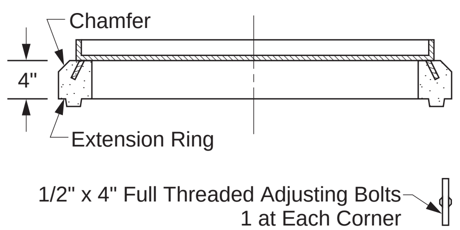
3.5-3.c

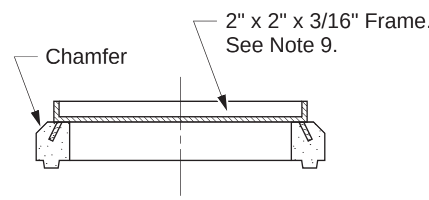
T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure3-5-3_TelecommunicationsUndergroundRoutes_KERN.mxd 6/15/2021 9:42:25 PM

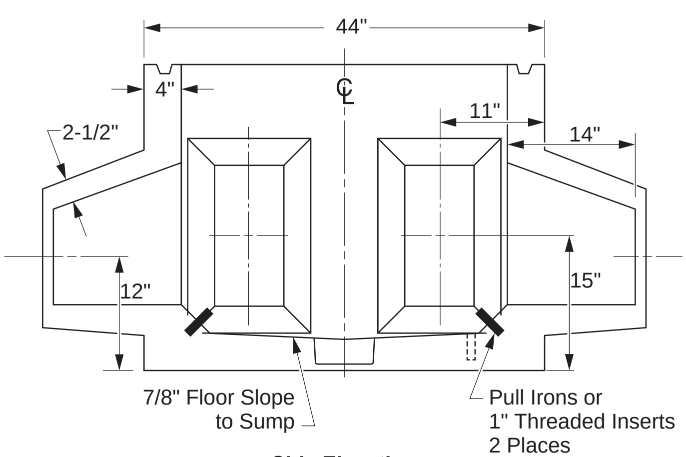



**Plan View**

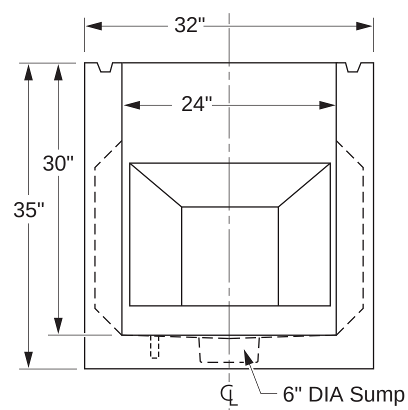



**Side Elevation**




**End Elevation**

# GORMAN-KERN RIVER 66 kV PROJECT

## VAULT/PULL BOX DETAIL

ARCADIS | SOUTHERN CALIFORNIA EDISON | An EDISON INTERNATIONAL Company

FIGURE 3.5-4

# 4 Description of Alternatives

This Chapter identifies alternatives to the proposed GKR Project. Section 15126 of the CEQA Guidelines states that "an EIR shall describe a range of reasonable alternatives to the project or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives."

The GKR Project is being proposed to meet the following objectives:

- Ensure compliance with standards contained in GO 95.
- Address reliability concerns related to the condition of existing infrastructure on the affected subtransmission lines.

These objectives were used to develop and evaluate alternatives to the GKR Project. Several corrective actions were considered but dismissed as infeasible as they would not feasibly attain the objectives, or for other considerations.

## 4.1 Alternatives Considered

### 4.1.1 Alternatives Suggested, Considered, or Studied by the CAISO or by CAISO Stakeholders

No alternatives were suggested, considered, or studied by the CAISO or by CAISO stakeholders.

### 4.1.2 Alternatives Suggested by the Public or Agencies

No alternatives were suggested by the public or agencies during public outreach efforts conducted by the Applicant.

### 4.1.3 Reduced Footprint Alternatives

SCE developed two reduced footprint alternatives to the GKR Project.

#### *4.1.3.1 Decommission 66 kV Subtransmission Lines Between Gorman, Banducci, and Kern River 1 Hydroelectric Substations*

The first reduced footprint alternative that SCE considered was the removal of the Banducci-Kern River 1 66 kV Subtransmission Line and the Gorman-Kern River 1 66 kV Subtransmission Line. The removal of these lines would result in less permanent footprint impacts overall. However, upon examining the system configuration with the removal of these lines, SCE determined that implementing this alternative would result in permanent de-energization to some customers, would result in a loss of service for extended periods of time to other SCE customers, and would violate SCE's planning criteria by removing a second required electrical source line at several substations. For these reasons, SCE rejected this reduced footprint concept alternative.

#### *4.1.3.2 Decommission Kern River 1 Hydroelectric Plant*

SCE also considered decommissioning the Kern River 1 Hydroelectric Plant and removal of the Banducci-Kern River 1 66 kV Subtransmission Line as a reduced footprint alternative. SCE determined that implementation of this alternative would result in the permanent de-energization of some customers, a loss of service for extended periods of time to other SCE customers and would violate SCE's planning criteria by removing a second required electrical source line at several substations. Removal of the

Banducci-Kern River 1 66 kV Subtransmission Line connecting the Kern River 1 Hydroelectric Plant would result in inadequate service to loads served from the Kern River 1 Hydroelectric, Banducci, Cummings, Correction, Gorman and Frazier Park substations. Also, by decommissioning the Kern River 1 Hydroelectric Plant, whose Federal Energy Regulatory Commission license has recently been renewed for 30 years, SCE would remove a renewable generation source from SCE's system, which could require SCE to purchase additional renewable energy to meet statewide renewable energy goals at an increased cost to its customers. For these reasons, SCE rejected this reduced footprint concept alternative.

### 4.1.4 Project Phasing Options

No project phasing options were considered. Because the primary objective of the GKR Project is to remediate all identified discrepancies on the subject circuits as quickly as feasible, phasing options were not considered as any phasing approach would only delay achievement of that objective without any apparent environmental benefit. In addition, no significant environmental impacts were identified that could be ameliorated through the temporal phasing of the GKR Project.

### 4.1.5 Alternative Facility and Construction Activity Sites

Because the subtransmission lines included under the GKR Project are extant and currently used to provide service to existing load and generation customers, and because SCE must continue to provide service to those existing load and generation customers, no alternative facility sites are feasible.

#### *4.1.5.1 Substation Site Alternatives*

Subtransmission line clearance remediation cannot be accomplished solely by the installation of a new substation. Consequently, no substation site alternatives were considered.

#### *4.1.5.2 Construction Activity Site Alternatives*

The very large majority of construction activity sites are fixed due to the presence of extant subtransmission infrastructure. SCE evaluated numerous sites for staging areas; the feasible locations are included under the GKR Project.

### 4.1.6 Renewable Energy, Energy Conservation, Energy Efficiency, Demand Response, Distributed Energy Resources, and Energy Storage Alternatives

Discrepancies are physical violations of applicable standards. Energy conservation, energy efficiency, and demand response measures would not remediate the identified discrepancies. SCE did not identify any alternatives that are wholly based on the deployment of renewable energy generation or distributed energy resources; Alternatives B and C, described in section 4.1.10 below, include distributed energy resources.

SCE considered Energy Storage facilities and other Distributed Energy Resources, including both traditional and renewable technologies, as alternatives to the GKR Project. For these alternatives, SCE would deploy strategically placed energy storage facilities or distributed energy resources to reduce the loading on the existing Kern River-Banducci 1 and Gorman-Kern River 1 66 kV subtransmission lines. By lowering loading on these lines, SCE would be able to operate these lines at a lower loading level. This would eliminate the need to perform additional work on these lines because the reduced loading would reduce the sag on the conductor, which by itself would theoretically eliminate a number of discrepancies on these lines. For the GKR Project, however, SCE determined that even if the loading on these lines was decreased to 0 Amps (A), while continuing to energize them at 66 kV, more than 40 percent of the existing discrepancies would still require extensive mitigation to remediate the facilities to meet GO 95 requirements. Moreover, these discrepancies occur along the entire extent of the Kern River-

Banducci 1 and Gorman-Kern River 1 66 kV lines. Therefore, SCE concluded that these alternatives would not achieve project objectives and therefore were not further considered.

Similarly, any alternatives employing Energy Conservation, Energy Efficiency, and/or Demand Response strategies would reduce the loading on the existing facilities. However, as previously mentioned, a reduction of load on these lines would: 1) reduce the reliability of service to SCE customers; and 2) not eliminate all of the identified discrepancies on these lines, and therefore a substantial amount of work would still be needed to completely remediate all of the discrepancies. For energy storage in particular, when energy storage devices are in charging mode, they would act as a load on the line and therefore add to the existing loading on the line. The addition of load due to the charging of energy storage devices would exacerbate line sag and GO 95 discrepancies. Therefore, because all alternatives employing load reducing techniques would not meet the project objectives, SCE eliminated them from further consideration.

### 4.1.7 Avoid or Limit the Construction of New Transmission-Voltage Facilities

To avoid or limit the construction of new transmission-voltage facilities, SCE considered derating the existing Banducci-Kern River 1 and Gorman-Kern River 1 66 kV circuits. SCE determined that even with derating the aforementioned lines to 0A, while continuing to energize them at 66 kV, more than 40 percent of the existing discrepancies would still require extensive mitigation to remediate the facilities to meet GO 95 requirements. Therefore, this alternative was not considered for further evaluation.

SCE also considered raising existing structures to avoid or limit the construction of new facilities. This alternative primarily consisted of raising lattice steel towers and replacing wood poles with taller poles. However, due to the condition and construction of the structures, they cannot be safely raised. As such this alternative was dismissed due to the infeasibility of implementation.

### 4.1.8 Other Technological Alternatives

SCE developed two types of technological alternatives to the GKR Project.

#### *4.1.8.1 Conductor Alternatives*

First, SCE considered alternatives involving different conductor. SCE considered reconductoring the existing subtransmission lines with both standard conductor as well as with high-temperature low-sag conductor. However, regardless of whether standard conductor or high-temperature low-sag conductor were to be used, in either instance reconductoring would necessitate the replacement of a substantial number of the existing structures, and therefore it would not provide any material benefit compared to the GKR Project. With the use of standard conductor, line clearance theoretically can be improved, and discrepancies can be remediated, by increasing the tension under which the conductor is installed. However, for the GKR Project, higher tensions cannot be supported by the existing subtransmission structures, and thus reconductoring with a standard conductor is infeasible. Similarly, the installation of high-temperature low-sag conductor would also result in increased tension on the subject structures and those structures would not be expected to be able to accommodate the new conductor and would likely have to be replaced.[16] Therefore, although reconductoring theoretically could eliminate discrepancies,

[16] High-temperature low-sag conductor theoretically could improve line clearance under high amperage loads due to the materials used in this conductor. However, clearances are not generally expected to be improved under low amperage loads. Because the Gorman-Kern River 1 and Banducci-Kern River 1 66 kV circuits are already operated at low amperages, the use of high-temperature low-sag conductor would leave a substantial number of discrepancies un-remediated. This provides another reason why reconductoring with this type of conductor, in and of itself, would not achieve the primary project objective.

structure replacements would still be necessary to accommodate the new conductor. Therefore, using a different conductor would have no impact on the need for structure replacement.

Further, it is important to note that higher tensions on high-temperature low-sag conductor have been found to create additional technical challenges, including more frequent conductor vibration which could accelerate hardware failure and necessitate additional replacements or repairs in the future. In sum, any alternative that involves reconductoring alone, without the added scope of work associated with structure replacements, is infeasible and/or would not achieve the primary project objectives.

#### *4.1.8.2 Microgrid Alternatives*

SCE considered using microgrids[17] in lieu of an existing 66 kV source line as another technological alternative. The microgrid alternatives consisted of locating microgrids at or adjacent to substations associated with the GKR Project. The application of a microgrid to serve a substation, as well as all downstream load, was considered as part of an alternate source to the traditional 66 kV source line. However, due to the large loads currently served from each substation as well as the need to adequately serve downstream customers, any microgrid would require large photovoltaic (PV) generating stations. These large PV installations would require an extensive amount of land (at a minimum 150 acres) to be developed. In addition to these large PV installations, backup fossil fuel generators and large battery storage facilities would also be required as an integral part of the proposed microgrid. Due to these extensive generation and land requirements, SCE determined that the footprint for these microgrids would be much larger than the GKR Project. As such, SCE concluded that implementation of the microgrid alternative would have a much greater environmental impact as compared to the GKR Project. Therefore, for reasons mentioned above, the microgrid alternatives were not considered for further evaluation.

### 4.1.9 Route Alternatives and Route Variations

Alternatives A, B, and C addressed in Section 4.1.10 below include route alternatives. No other route alternatives or route variations were identified.

### 4.1.10 Alternative Engineering or Technological Approaches

SCE identified three system-level alternatives (Alternatives A, B, and C) that would meet the objectives of the GKR Project. Each alternative would result in a change to SCE's system in the region; these are shown graphically in Figures 4.1-1b through -1d; Figure 4.1-1a graphically shows the existing system for comparison. Where applicable, the segment numbering used to describe the proposed GKR Project is followed here as well, to facilitate comparison between the alternatives and the GKR Project.

#### *4.1.10.1 Alternative A*

Alternative A is displayed graphically in Figure 4.1-1b. The components of Alternative A include the following:

- Segment 1: Scope identical to the GKR Project.
- Segment 2: Remove all existing structures and conductor; no new structures or conductor to be constructed.
- Segment 3: Scope identical to the GKR Project.
- Segment 4: Scope identical to the GKR Project.

[17] For the purposes of this PEA. the term microgrid is defined as a self-sustaining generation and load network that consists of customers served directly or indirectly from a substation and a combination of self-sustaining generation (e.g. a combination of battery storage, solar generation, fossil fuel generation, and/or wind generation) sources to serve those customers.

- Segment 5: Scope identical to the GKR Project.
- Rebuild the Bailey-Gorman 66 kV Subtransmission Line to create a second Bailey-Gorman 66 kV Subtransmission Line. This would entail removal of all existing single-circuit wood poles and installation of new TSPs and LWS poles. Existing subtransmission conductor would be removed; existing distribution conductor, telecommunications cable, and appurtenances would be removed and reinstalled on, or transferred to, new double-circuit TSPs and LWS poles.
- Construct new ring-bus near the existing Highwind Substation.
- Rebuild that portion of the existing Banducci-Correction-Cummings-Monolith 66 kV Subtransmission Line between the new ring-bus and the existing Banducci Substation. This would entail removal of all existing single-circuit wood poles and installation of new TSPs and LWS poles. Existing subtransmission conductor would be removed; existing distribution conductor, telecommunications cable, and appurtenances would be removed and reinstalled on, or transferred to, new double-circuit TSPs and LWS poles.
- Make system protection modifications at existing substations.

Alternative A is feasible and is included herein for analysis.

#### *4.1.10.2 Alternative B*

Alternative B is displayed graphically in Figure 4.1-1c. The components of Alternative B include the following:

- Segment 1: Remove all existing structures and conductor; no new structures or conductor to be constructed.
- Segment 2: Scope identical to the proposed GKR Project.
- Segment 3: Scope identical to the proposed GKR Project.
- Segment 4: Scope identical to the proposed GKR Project.
- Segment 5: Scope identical to the proposed GKR Project.
- Construct a new 16 mile-long 66 kV subtransmission line between the existing SCE Magunden Substation and the existing SCE Kern River 1 Hydroelectric Substation. New subtransmission line would be constructed in existing and new ROW. Entire length of the new subtransmission line would be constructed in an overhead configuration using TSPs and LWS poles.
- Install a fossil fuel-fired generation set and a renewable energy generation/battery storage system at the existing SCE Kern River 1 Hydroelectric Substation to provide emergency power during loss of grid power from the existing SCE Magunden Substation.
- Make system protection modifications at existing substations.

Alternative B is feasible and is included herein for analysis.

#### *4.1.10.3 Alternative C*

Alternative C is displayed graphically in Figure 4.1-1d. The components of Alternative C include the following:

- Segment 1: Remove all existing structures and conductor; no new structures or conductor to be constructed.
- Segment 2: Scope identical to the proposed GKR Project.
- Segment 3: Scope identical to the proposed GKR Project.

- Segment 4: Scope identical to the proposed GKR Project.
- Segment 5: Scope identical to the proposed GKR Project.
- Construct a new 12 mile-33 kV or 46 kV subtransmission line between the existing SCE Magunden Substation and the existing SCE Kern River 1 Hydroelectric Substation. New subtransmission line would be constructed in existing and new ROW. Five miles of the length of the new subtransmission line would be constructed in an overhead configuration using TSPs and LWS poles; 7 miles would be installed underground.
- Install a fossil fuel-fired generation set and a renewable energy generation/energy storage system at the existing SCE Kern River 1 Hydroelectric Substation to provide emergency power during loss of grid power from the existing Magunden Substation.
- Make system protection modifications at existing substations.

Alternative C is feasible and is included herein for analysis.

## 4.2 No Project Alternative

CEQA requires an evaluation of the No Project Alternative so that decision makers can compare the impacts of approving the GKR Project with the impacts of not approving the project (CEQA Guidelines, Section 15126.6(e)). Under the No Project Alternative, no construction or modification of the existing electrical system would occur. Therefore, the No Project Alternative would not meet any of the GKR Project's objectives because it would not remediate any identified GO 95 discrepancies or improve reliability. Under the No Project Alternative, the identified discrepancies would remain unaddressed, and SCE has not, at this time, developed a plan of action to address the identified discrepancies if the GKR Project is not approved. The No Project Alternative would not meet the GKR Project objectives.

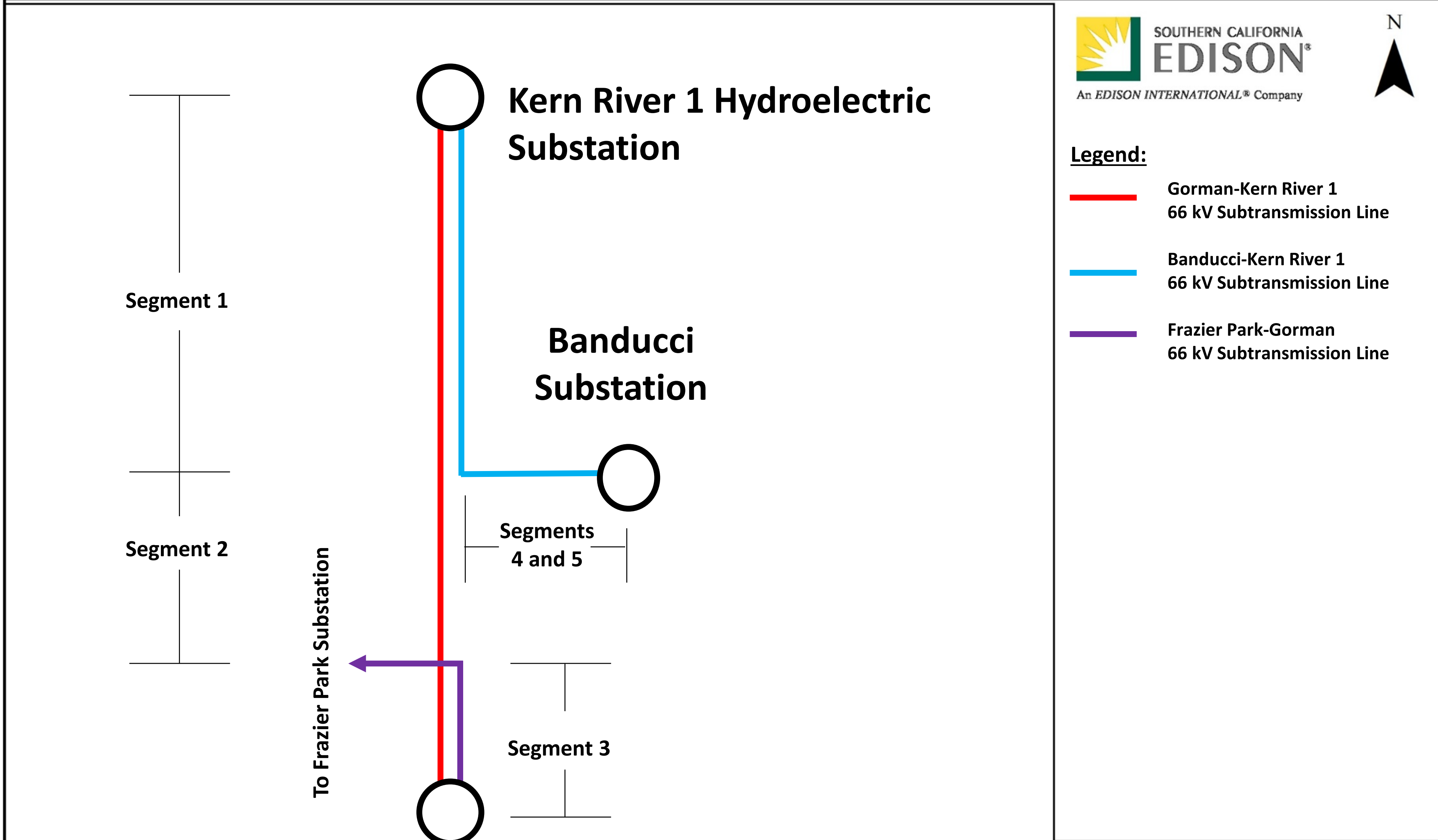
## 4.3 Rejected Alternatives

Each Alternative addressed in Section 4.1, with the exception of Alternative A, Alternative B, and Alternative C, was rejected by SCE.

The subsection in Section 4.1 for each rejected Alternative presents a summarized description and reasoning for why each Alternative would not meet project objectives and/or is infeasible.

Because each non-selected Alternative is not feasible and/or would fail to meet the GKR Project objectives, SCE has not performed any analysis to determine if any significant impacts could result from their implementation. However, no rejected Alternative would reduce or avoid any significant environmental impact of the GKR Project, as no significant environmental impacts have been identified for the GKR Project.

No comments from the public or agencies on any of the Alternatives were received by SCE during preparation of the PEA document.

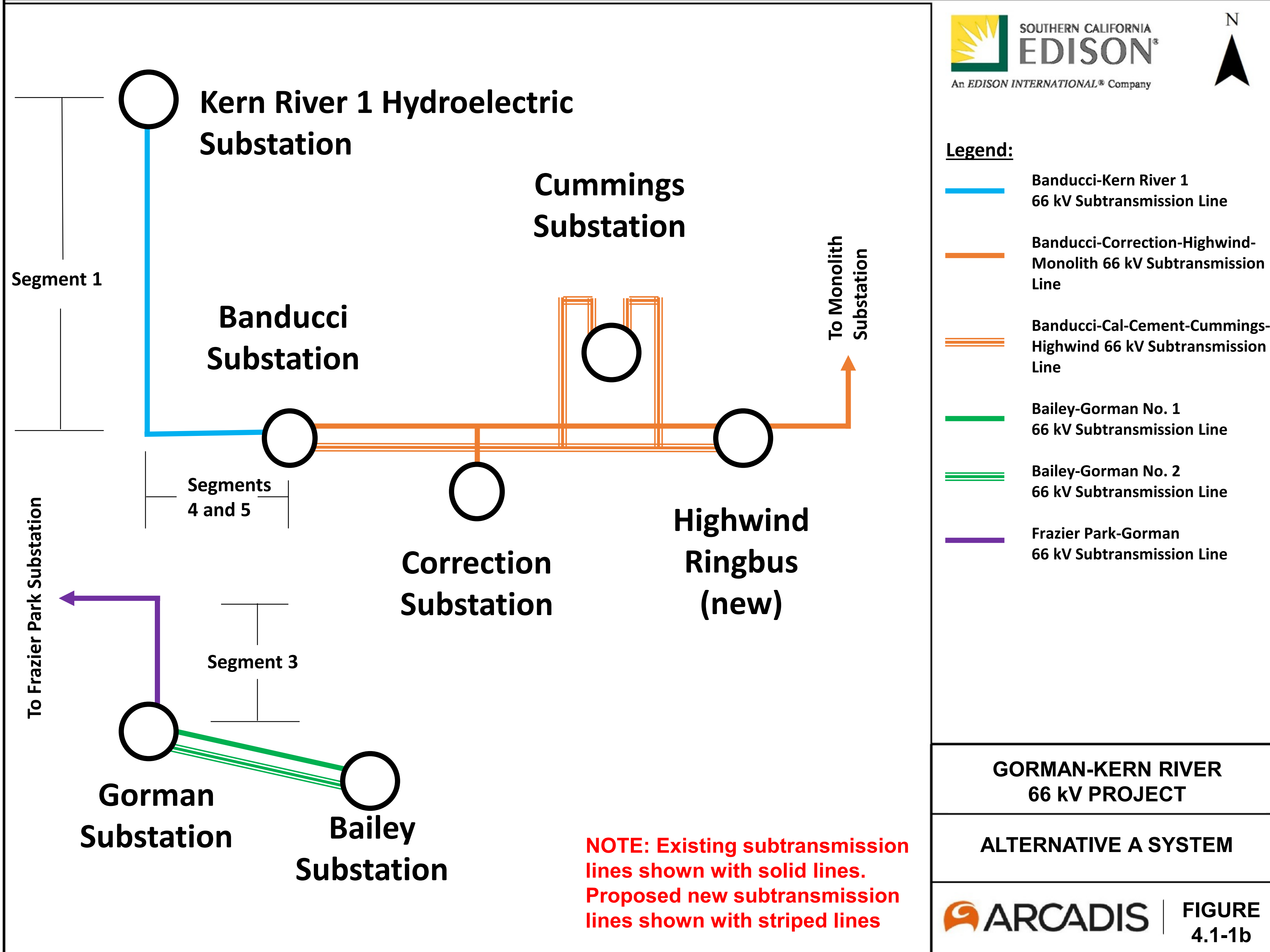



GORMAN-KERN RIVER 66 kV PROJECT

EXISTING SYSTEM

ARCADIS

FIGURE 4.1-1a

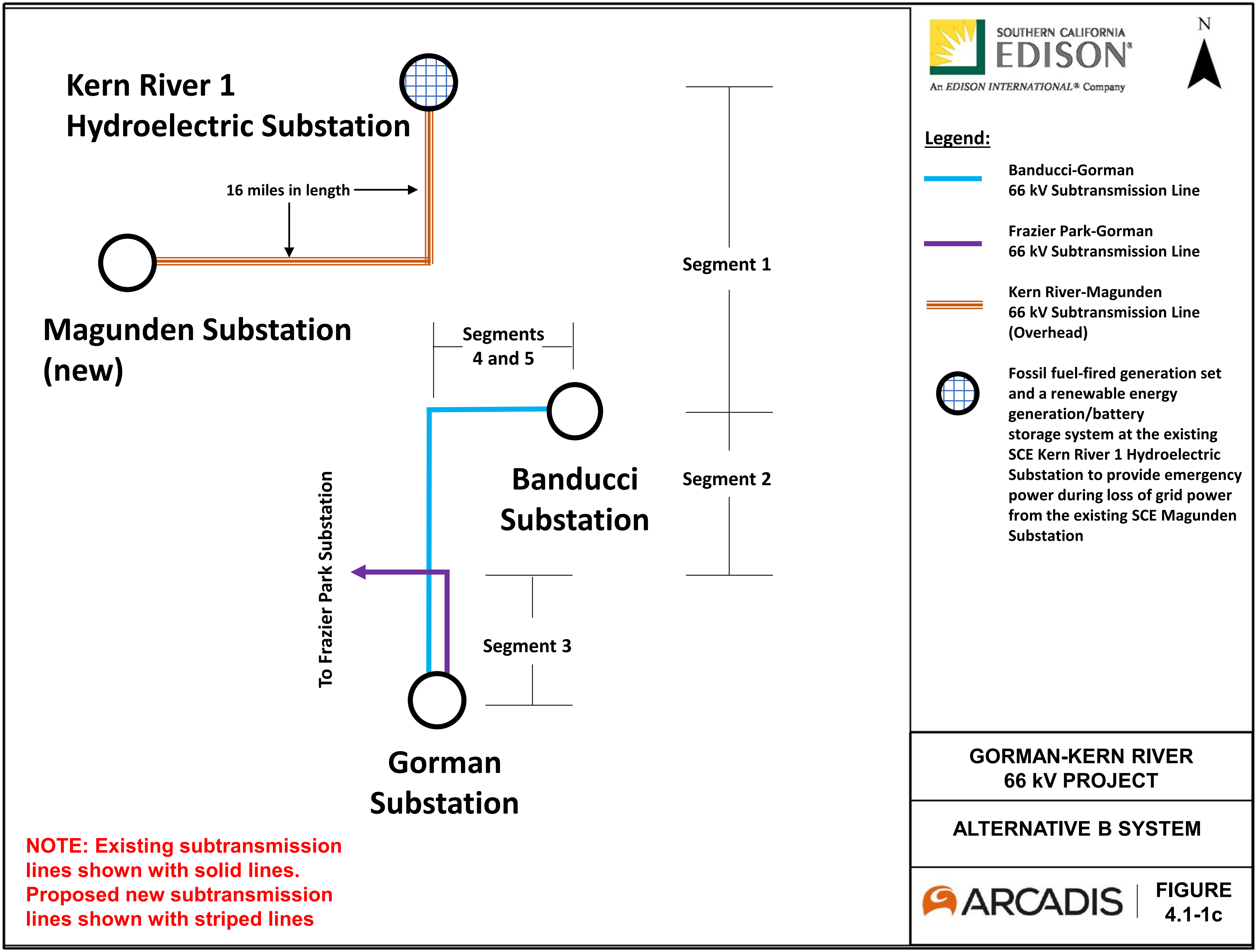


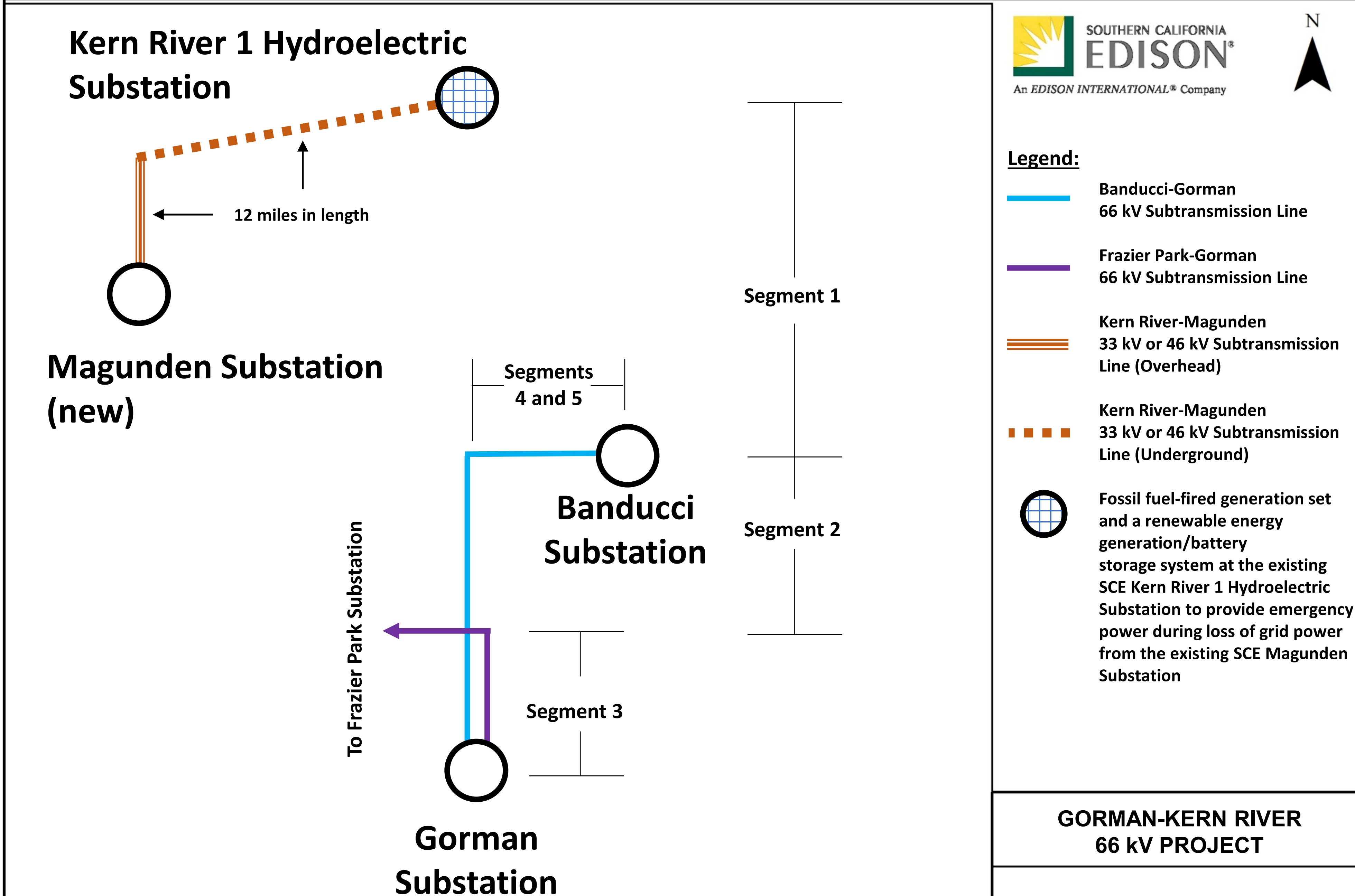

GORMAN-KERN RIVER 66 kV PROJECT

ALTERNATIVE A SYSTEM

ARCADIS

FIGURE 4.1-1b


Kern River 1
Hydroelectric Substation
16 miles in length
Magunden Substation
(new)
Segment 1
Segments
4 and 5
Banducci
Substation
Segment 2
To Frazier Park Substation
Segment 3
Gorman
Substation
NOTE: Existing subtransmission lines shown with solid lines. Proposed new subtransmission lines shown with striped lines
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company
N
Legend:
Banducci-Gorman 66 kV Subtransmission Line
Frazier Park-Gorman 66 kV Subtransmission Line
Kern River-Magunden 66 kV Subtransmission Line (Overhead)
Fossil fuel-fired generation set and a renewable energy generation/battery storage system at the existing SCE Kern River 1 Hydroelectric Substation to provide emergency power during loss of grid power from the existing SCE Magunden Substation
GORMAN-KERN RIVER 66 kV PROJECT
ALTERNATIVE B SYSTEM
ARCADIS
FIGURE 4.1-1c




NOTE: Existing subtransmission lines shown with solid lines.
Proposed new subtransmission lines shown with striped or dotted lines

GORMAN-KERN RIVER 66 kV PROJECT

ALTERNATIVE C SYSTEM

ARCADIS | FIGURE 4.1-1d

# 5 Environmental Analysis

This Chapter examines the potential environmental impacts of the GKR Project. The analysis of each resource category begins with an examination of the existing physical setting (baseline conditions as determined pursuant to Section 15125(a) of the CEQA Guidelines) that may be affected by the GKR Project. The effects of the GKR Project are defined as changes to the environmental setting that are attributable to project construction and operation.

Significance criteria are identified for each environmental issue area. The significance criteria serve as a benchmark for determining if a project would result in a significant adverse environmental impact when evaluated against the baseline. According to the CEQA Guidelines Section 15382, a significant effect on the environment means "…a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the Project." If significant impacts are identified, feasible APMs are formulated to eliminate or reduce the level of the impacts and focus on the protection of sensitive resources.

CEQA Guidelines Section 15126.4(a)(3) states that mitigation measures are not required for effects which are not found to be significant. Therefore, where an impact is less than significant no APMs may be proposed; however, where potentially adverse impacts may occur, SCE has in some instances proposed APMs to minimize the potential adverse impact. Compliance with laws, regulations, ordinances, and standards designed to reduce impacts to less than significant levels are not considered mitigation measures under CEQA.

Page intentionally left blank.

## 5.1 Aesthetics

This Section of the PEA examines visual resources in the area of the GKR Project to determine how the GKR Project could affect the aesthetic character of the landscape. This section includes a description of existing visual conditions and an evaluation of potential visual impacts on aesthetic resources resulting from the construction, operation, and maintenance of the GKR Project. The GKR Project includes modifying and rebuilding existing 66 kV subtransmission facilities within existing utility ROWs between the existing Banducci, Gorman, and Kern River 1 Hydroelectric substations located in Kern and Los Angeles counties in California.

Visual or aesthetic resources are generally defined as the natural and built features of the landscape that can be seen. Landforms, water, and vegetation patterns are among the natural landscape features that define an area's visual character, whereas buildings, roads and other structures reflect human modifications to the landscape. These natural and built landscape features are considered visual resources that contribute to the public's experience and appreciation of the environment. This section analyzes whether the GKR Project would alter the perceived visual character of the environment and cause visual impacts.

The visual analysis is based on site reconnaissance and review of technical data including maps and drawings as well as review of aerial and ground level photographs of the GKR Project area, review of public policy and planning documents, and computer-generated visual simulations that portray the project's appearance. Field observations were conducted in January 2018 and August 2019 to document existing visual conditions in the GKR Project's vicinity, including potentially affected sensitive viewing locations.

Visual simulations were prepared to support the impact analysis and illustrate before-and-after visual conditions in the GKR Project area as seen from five key sensitive public viewpoints or Key Observation Points (KOPs) out of a total of 18 representative viewpoints. The KOPs represent views where the project would be most visible to the public from sensitive locations such as designated scenic roadways, recreation facilities, areas in proximity to residences, or public land subject to scenic resource management policy.

This visual assessment employs methods based, in part, on those adopted by the U.S. Department of Interior Bureau of Land Management (BLM), the USFS, USDOT Federal Highway Administration (FHWA), and other accepted visual analysis techniques. The impact analysis describes change to existing visual resources and assesses viewer response to that change. Central to this assessment is an evaluation of key views from which the project would be visible to the public. The visual impact assessment is based on evaluation of the project-related changes to the existing visual resources that would result from construction and operation of the project; the changes were assessed, in part, by evaluating views of the GKR Project provided by the computer-generated visual simulations and comparing them to the existing visual environment. A description of the technical methods that were employed to prepare the visual simulations is included in Section 5.1.4.3.

### 5.1.1 Environmental Setting

#### *5.1.1.1 Landscape Setting*

Figure 5.1-1a shows the GKR Project location within a regional and local landscape context, as well as the locations where photographs were taken; Figure 5.1-1b presents a viewshed analysis for the project's alignment. The GKR Project is located at the confluence of the San Joaquin Valley and the surrounding mountains that define the southern margin of California's much larger Central Valley. The GKR Project traverses diverse terrain ranging from the relatively homogenous, flat topography of the southern San

Joaquin Valley to mountainous areas that emerge abruptly from expansive, gently sloping alluvial plains surrounding the valley floor, including the southern tip of the Sierra Nevada Mountains to the northeast, the Tehachapi Mountains to the south and east and the Central Coast Range on the west. Elevations along the GKR Project route range from approximately 400 feet above sea level (ft amsl) near the City of Arvin in the San Joaquin Valley, to approximately 930 ft amsl to the north near the existing Kern River 1 Hydroelectric Substation, to over 4,000 ft amsl in the Tehachapi Range near the top of Grapevine Canyon to the south, with surrounding peaks reaching elevations of approximately 7,500 ft amsl.

The north-south GKR Project alignment originates at the existing Kern River 1 Hydroelectric Substation where it emerges from the mouth of the Kern River Canyon and traverses the eastern margin of the San Joaquin Valley and subsequently enters Grapevine Canyon through the steep flank of the east-west trending Tehachapi Mountains to the south. From its origin at a “T” junction (“the T”) along the north-south alignment near the town of Arvin, the GKR Project’s eastward extension traverses the eastern margin of the San Joaquin Valley before crossing the rugged Tejon Hills and entering the relatively gentle terrain of the Cummings Valley within the eastern Tehachapi Range. A tapestry of green row crops, orchards and vineyards characterizes the flat, irrigated San Joaquin Valley landscape, and contrasts sharply with the arid mountainous terrain through which the GKR Project passes, where the predominant vegetation consists of sparse, low growing chaparral and open grassland, punctuated by scattered stands of oak and pines at higher elevations. In much of the GKR Project’s area outside the verdant valley bottoms, areas of exposed rock and soil create a general pattern that gives the landscape a mottled appearance.

The landscape within the GKR Project area exhibits a high level of human modification, and reflects its proximity to important regional transportation corridors, infrastructure, and population centers. Within the San Joaquin Valley, the GKR Project skirts the eastern edge of the city of Bakersfield, located along State Route 99 (SR-99), the main north-south transportation link between population centers within the Central Valley. With approximately 834,000 inhabitants, Bakersfield serves as the hub for processing and transport of products derived from vast areas of surrounding farmland and represents the area’s largest concentration of population. Approximately 23 miles south of Bakersfield, a portion of the GKR Project joins Interstate 5 (I-5), where for approximately 7.5 miles the alignment parallels and crosses this heavily-traveled regional highway connecting northern and southern California. In addition, the GKR Project passes in proximity to or crosses important east-west roadway corridors within the San Joaquin Valley. Among these are SR-178, which traverses suburban communities northeast of Bakersfield before entering the Kern River canyon where it serves as an important trans-Sierra route within the region. The GKR Project also crosses SR-58, a relatively-heavily-traveled freeway connecting the San Joaquin Valley with population centers within the Tehachapi Mountains to the east and Mojave Desert communities beyond.

In addition to regional highway corridors described above, a grid of local paved and unpaved rural roadways, railroad lines, and electric utility infrastructure—including numerous power and distribution lines—are noticeable linear elements in the landscape. Additional built features within the GKR Project area include power generating facilities and agricultural structures such as warehouses, equipment storage yards, irrigation components, and produce processing plants.

Despite its highly-modified character, the landscape in the immediate GKR Project vicinity is relatively sparsely inhabited, with the area’s population outside of Bakersfield concentrated in a small number of scattered rural and suburban communities. Within the San Joaquin Valley this includes the farm community of Arvin, approximately 15 miles south of Bakersfield, with a population of approximately 19,300. The small unincorporated community of Lebec, with less than 1,500 residents, is located near the Tejon Pass summit along I-5. For the most part the population along the immediate project route consists of dispersed rural residences in the valley flatlands while scattered, low density semi-rural and suburban residential clusters are found within the surrounding foothills and mountains.

### *5.1.1.2 Scenic Resources*

Scenic resources are those natural and built landscape patterns and features that are considered visually or aesthetically pleasing, and therefore contribute positively to the definition of a distinct community or region. Scenic resources may include trees or other important vegetation; landform elements, such as hills or mountains, ridgelines or rock outcroppings; water features, such as rivers, bays, or reservoirs; and landmarks, important buildings, or historic sites and structures.

As described in Section 5.1.1, landscape features visible along the GKR Project route include portions of the lower Kern River and Grapevine canyons and gentler terrain of the Cummings Valley, as well as rugged terrain of the Tejon Hills and mountainous Tehachapi Mountains. Approximately 0.4 miles of the GKR Project alignment within Kern River Canyon passes through the Lower Kern River Place, part of SNF administered by the USFS, and approximately 450 feet of the GKR Project alignment is located on LPNF land. The GKR Project is adjacent to Fort Tejon State Historic Park, a designated California landmark that includes restored adobes from the original fort and a museum chronicling site and early California history as well as numerous 400-year-old valley oak trees.

A portion of the GKR Project alignment in Segment 4 (see Figure 5.1-1a) is routed through a mixed oak woodland forest that is identified as a ‘scenic landscape’ in the Greater Tehachapi Area Specific and Community Plan (Kern County 2010). No other scenic resources in the vicinity of the GKR Project are identified in a relevant planning document. There are no designated or eligible scenic highways crossed by or proximate to the GKR Project alignment. There are no designated or proposed national scenic areas crossed by, or within the viewshed of, the GKR Project alignment.

Section 5.1.2, Regulatory Setting provides additional detail on policies regarding scenic resources in the GKR Project area.

### *5.1.1.3 Viewshed Analysis*

Project viewshed is defined as the general area from which a project is visible. For purposes of describing a project’s visual setting and assessing potential visual impacts, the viewshed can be broken down into foreground, middleground, and background zones. The foreground is defined as the zone within 0.25 to 0.5 mile from the viewer. The middleground is defined as the zone extending from the foreground to a maximum of 3 to 5 miles from the viewer; and the background zone extends from the middleground to infinity (USFS 1995 and USDOT 2015).

Viewing distance is a key factor that affects the potential degree of project visibility. Visual details generally become apparent to the viewer when they are observed in the foreground, at a distance of 0.25 to 0.5 mile or less. Analysis of the GKR Project primarily considers the potential effects of project elements on foreground viewshed conditions although consideration is also given to the potential effects on the middleground and background views.

Figure 5.1-1b presents a viewshed analysis for the GKR Project alignment that identifies the theoretical visibility, up to a distance of 5 miles, of the GKR Project’s proposed infrastructure based on the height of project components and surrounding topography. Areas on the map are identified where the project could be visible or not visible. As shown in Figure 5.1-1b, in the absence of intervening vegetation, structures, or other factors such as atmospheric conditions, visibility of proposed GKR Project infrastructure is generally unconstrained by topography in the southern portion of Segment 1, the northern and central portions of Segment 2, the northern portion of Segment 3, the western portion of Segment 4, and along the entirety of Segment 5. In these areas the terrain is relatively flat, and views of the project are not limited by topography. In areas where the viewing distance is constrained by topography, views of the project may be blocked by intervening terrain. Within the portions of Segments 1 and 2 located within the San Joaquin Valley, particulate matter emissions from agricultural activities frequently result in reduced viewing distances. Within Segment 2 between Grapevine and Lebec, the northern portion of Segment 3, and much of Segment 4, intervening vegetation, structures, and in some cases backdrop conditions, as well as topography, constrain visibility of some project elements.

### *5.1.1.4 Landscape Units*

Three Landscape Units incorporating the five GKR Project segments are utilized for purposes of documenting and describing existing visual conditions within the project viewshed. These Landscape Units or subareas are based upon the primary physical and cultural landscape characteristics found along the GKR Project alignment; the Landscape Units are not defined by the GKR Projects features or segments. As noted above in the landscape setting discussion, the GKR Project is located at the confluence of the San Joaquin Valley and the surrounding mountains, the Tehachapi Range and Tejon Hills, that define the southern margin of California's much larger Central Valley. North of the Tehachapi Range, the primary physical/cultural landscape found along the GKR Project alignment is the San Joaquin Valley; thus Landscape Unit 1 includes that portion of the GKR alignment north of the Tehachapi Range as well as secondary physical landscapes. Landscape Unit 2 includes the Tehachapi Range, south of the San Joaquin Valley. East of the San Joaquin Valley, the primary physical landscape found along the GKR Project alignment is the Tejon Hills; this, along with secondary physical landscapes, are included in Landscape Unit 3. Table 5.1-1 summarizes the Landscape Units in terms of their location and approximate length and corresponding project segments. Figure 5.1-1a depicts the location of Landscape Units in relationship to the GKR Project alignment and photograph viewpoints.

**Table 5.1-1. Summary of Landscape Units**

| Landscape Unit | Location | Approximate Length | Project Segments |
|---|---|---|---|
| 1. San Joaquin Valley: Kern River 1 Hydroelectric Substation to Grapevine Canyon | Kern County | 5.5 miles | Entirety of 1<br>Part of 2 |
| 2. Tehachapi Mountains: I-5 corridor along Grapevine Canyon to Gorman Substation | Kern County and Los Angeles County | 12 miles | Part of 2<br>Entirety of 3 |
| 3. Tejon Hills: 'The T' to Banducci Substation | Kern County | 14.3 miles | Entirety of 4 and 5 |

#### 5.1.1.4.1 Landscape Unit 1 (Photographs 1 through 7)

Landscape Unit 1 extends from the lower Kern River Canyon to near the entrance to Grapevine Canyon and I-5 at the base of the Tehachapi Mountains. Landscape Unit 1 encompasses an approximately 40-mile-long portion of the north-south GKR Project alignment; in this Landscape Unit the alignment originates at the existing Kern River 1 Hydroelectric Substation, adjacent to SR-178 near the mouth of a narrow, rocky canyon formed by the Kern River. Shortly after emerging from the canyon, the GKR Project alignment veers away from SR-178 and for approximately eight miles crosses sparsely-populated range lands within the Sierra foothills approximately six miles east of Bakersfield. Subsequently entering the flat, agricultural landscape along the southeastern edge of the San Joaquin Valley, the alignment crosses SR-58 and for approximately the next 30 miles parallels rural roads in an area characterized by expansive open fields, orchards and widely-dispersed rural residences.

Photographs 1 through 7 on Figures 5.1-2a through d show representative views of the GKR Project and surrounding landscape character found within Landscape Unit 1. Two of these views are KOPs selected to show project as seen from sensitive locations within the San Joaquin Valley (refer to Figure 5.1-1a). Appendix J includes a detailed description of these representative photographs.

#### 5.1.1.4.2 Landscape Unit 2 (Photographs 8 through 14)

Landscape Unit 2 begins where the GKR Project alignment approaches the I-5 corridor at the foot of the steep northern flank of the Tehachapi Range and extends approximately 12 miles to Gorman Substation southeast of Tejon Pass in Los Angeles County. In this landscape unit the GKR Project roughly parallels I-5 in a southeasterly direction for approximately eight miles as it ascends the rugged, sparsely-forested Grapevine Canyon. The GKR Project is adjacent to Fort Tejon State Historic Park, and passes a middle school in this area, crossing the heavily-traveled I-5 corridor four times before diverging from the highway, which veers southwest near the unincorporated community of Lebec as it approaches the summit of Tejon Pass. The GKR Project alignment continues southeast, crossing largely undeveloped open grassland and seasonal wetland within Castaic Valley, a part of the Tejon Ranch Conservancy, before traversing an area of unpaved trails and near the summit of the east-west trending spine of the western Tehachapi Mountains and entering Los Angeles County. The project route descends the grass and chaparral covered southern flank of the range to Gorman Substation, situated adjacent to the small unincorporated community of Gorman, approximately 3 miles southeast of Tejon Pass. On its descent from Tejon Pass the project once again comes into I-5 motorists' view, where the roadway is within approximately 0.2 mile of the substation with the exception of a few dispersed residences along Gorman Post Road, this area is largely uninhabited.

Photographs 8 through 14 on Figures 5.1-2d through g through show representative views of the GKR Project and surrounding landscape character found within Landscape Unit 2, and including two KOP views selected to show the GKR Project as seen from sensitive locations at Fort Tejon State Historic Park and along I-5 near Gorman (refer to Figure 5.1-1a). Appendix J includes a detailed description of these representative photographs.

#### 5.1.1.4.3 Landscape Unit 3 (Photographs 15 through 18)

From the eastern edge of the San Joaquin Valley approximately 1.5 mile southeast of Arvin, Landscape Unit 3 extends approximately 14.3 miles through the northeast extension of the Tehachapi Mountains. Beginning at "the T" junction along the north-south portion of the GKR Project, the alignment within this landscape unit traverses the virtually uninhabited Tejon Hills at the base of the Tehachapi Range, before entering intermittently wooded, hilly terrain overlooking the western edge of Cummings Valley. The project crosses an area with large-lot semi-rural residential properties which make up a part of the unincorporated development of Stallion Springs. Entering Cummings Valley to the east, the GKR Project parallels local farm roads through open agricultural fields. Landscape Unit 3 terminates at the existing SCE Banducci Substation.

Photographs 15 through 18 (Figures 5.1-2h and -2i) show representative views of the GKR Project and surrounding landscape character found within Landscape Unit 3. One of these views is a KOP selected to show the GKR Project as seen from a sensitive locations in the Stallion Springs area of Cummings Valley (refer to Figure 5.1-1a). Appendix J includes a detailed description of each representative photograph.

### *5.1.1.5 Viewers and Viewer Sensitivity*

Accepted visual assessment methods, including those adopted by the FHWA and other federal agencies, establish sensitivity levels as a measure of public concern for changes to scenic quality. Viewer sensitivity, one of the criteria used to evaluate visual impact significance, can be divided into high, moderate, and low categories. Factors considered in assigning a sensitivity level include viewer activity, view duration, viewing distance, adjacent land use, and special management or planning designation. Visual sensitivity will vary with the type of users (DOT 2015). The primary viewer groups within the GKR Project viewshed are described below.

#### 5.1.1.5.1 Motorists

Motorists or roadway travelers are the largest viewer group in the GKR Project area. Included in this group are motorists traveling on the region's network of paved highways, such as I-5, SR-178, SR-58 which are crossed, and in the case of I-5, paralleled by the project. Motorists include both local and regional travelers who are familiar with the visual setting. Local motorists include those commuting to Bakersfield and Tehachapi on a regular basis for work or school from outlying communities such as Stallion Springs and Tehachapi, and local residents and agricultural workers within the eastern San Joaquin Valley. Regional motorists using area roadways include long distance drivers of commercial vehicles and private motorists on I-5 where it crosses the Tehachapi Mountains, and SR-58 between Bakersfield and the Antelope Valley to the east, as well as recreational travelers accessing the Kern River Canyon and SNF along on SR-178. The duration of motorists' views is generally brief and depending upon the travel route and type of roadway, could range from a few seconds to up to several minutes. Viewer sensitivity is considered low to moderate.

#### 5.1.1.5.2 Residents

Residential viewers in the GKR Project area are largely dispersed in scattered small concentrations or at isolated rural residences. In general, residential views toward the project are either screened by intervening structures and vegetation or, where open views are available, as in the case of residents in the San Joaquin Valley, the project is not particularly noticeable due to viewing distance or backdrop conditions. A limited number of residences border the immediate Project corridor, such as those along Tower Line Road in the San Joaquin Valley and in places in and around Cummings Valley. To varying degrees, close range views of project structures are available to residents near the GKR Project alignment. Residential views tend to be long in duration, and the sensitivity of this viewer group is considered moderate to high.

#### 5.1.1.5.3 Recreationalists

A third viewer group in the GKR Project area is comprised of recreationalists including visitors to the Kern River Canyon/SNF lands and Fort Tejon State Historical Park. Activities include boating, fishing, hiking, bicycling, bird watching, wildlife viewing, and photography. Additional recreationalists in the area include off-highway vehicle (OHV) users at Hungry Valley State Vehicular Recreation Area southwest of Gorman Substation. Although the total duration of views for much of this viewer group tends to be short, the general expectation of a natural-appearing landscape setting among some recreationalists raises their sensitivity to moderate to high.

### *5.1.1.6 Representative Viewpoints*

Eighteen representative viewpoints have been identified for the GKR Project (Figure 5.1-1a). Table 5.1-2, a summary of this set of representative photographs, includes information on the viewpoint location, primary type of viewers, backdrop conditions, and approximate viewing distance to the project. In addition, Table 5.1-2 also highlights a subset of the photographs that are KOPs. Taken together, these photographs convey a general sense of the existing visual character of the landscape within the vicinity of the project.

**Table 5.1-2. Summary of Representative Viewpoints and KOP Photographs**

| Photograph number and Location<br>* denotes KOP | Primary Viewers | Viewing Distance | Predominant Backdrop for Project Structures |
|---|---|---|---|
| **Landscape Unit 1** | | | |
| 1. SR-178 near Kern River 1 Hydroelectric Substation | • Regional Motorists<br>• Recreationalists | < 500 feet | Landscape and sky |
| 2. SR-178 east of Bakersfield | • Recreational Motorists | 850 feet | Landscape and sky |
| 3. Breckenridge Road | • Local Motorists | 750 feet | Landscape |
| *4. SR-58 near Towerline Road | • Regional Motorists<br>• Local Motorists | 1,725 feet | Landscape and Sky |
| 5. Towerline Road | • Local Motorists<br>• Residents | 680 feet | Landscape and Sky |
| *6. Towerline Road near Arvin | • Local Motorists<br>• Residents | < 500 feet | Sky |
| 7. Rancho Road near David Road | • Local Motorists | 1,500 feet | Landscape |
| **Landscape Unit 2** | | | |
| 8. I-5 near Grapevine Road | • Regional Motorists<br>• Local Motorists | 700 feet | Sky and Landscape |
| *9. Fort Tejon State Historic Park | • Recreationalists<br>• Regional Motorists | 550 feet | Sky and Landscape |
| 10. Fort Tejon Middle School | • Students/faculty/ School Visitors | 530 feet | Landscape and Sky |
| 11. I-5 near Lebec | • Local Motorists<br>• Regional Motorists | 825 feet | Landscape and Sky |
| 12. Tejon Safety Roadside Rest Area along I-5 | • Regional Motorists | 1 mile | Landscape |
| *13. I-5 near Gorman Substation | • Local and Regional Motorists | 0.5 mile | Landscape |
| 14. I-5 near Gorman Substation | • Local and Regional Motorists | 0.75 mile | Landscape |
| **Landscape Unit 3** | | | |
| *15. Quail Drive near Comanche Point Road looking northwest | • Residents<br>• Local Motorists | < 500 feet | Sky |
| 16. Comanche Narrative Trail near Comanche Point Road | • Recreationalists | 775 feet | Sky |
| 17. Comanche Point Road at St. Andrews Place | • Residents<br>• Local Motorists | < 500 feet | Landscape and Sky |
| 18. Pellisier Road near Banducci Substation | • Local Motorists | < 500 feet | Landscape and Sky |

### *5.1.1.7 Representative Photographs*

Figures 5.1-2a through 5.1-2i present a set of 18 photographs taken from representative locations along the alignment within the GKR Project viewshed.

### *5.1.1.8 Visual Resource Management Areas*

Approximately 0.4 miles of the GKR Project alignment at the northern terminus crosses the SNF. The Draft SNF Land and Resource Management Plan establishes management objectives for this area. The project crosses part of the SNF with Scenic Integrity Objectives (SIOs) of High; where, as noted in Table

5.1-3, deviations may be present but they must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident.

Approximately 450 feet of the GKR Project alignment in Segment 2 and one tower are located in the LPNF. The LPNF Land and Resource Management Plan establishes management objectives for this area. This area of the LPNF has SIOs of High; where, as noted in Table 5.1-3, deviations may be present but they must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident.

## 5.1.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the GKR Project.

### *5.1.2.1 Federal*

#### 5.1.2.1.1 Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act of 1976 (FLPMA) (43 United States Code [U.S.C.] 1701) and the U.S. Department of the Interior's (DOI) BLM Land Use Planning Handbook (BLM 2005) both emphasize the importance of protecting the quality of scenic resources on public lands. FLPMA sections relevant to the GKR Project are:

- Section 102(a): "The public lands [shall] be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values."
- Section 103(c): Identifies "scenic values" as resources for public management. Section 201(a): "The Secretary shall prepare and maintain on a continuing basis and inventory of all public lands and their resources and other values (including...scenic values)."
- Section 505(a): "Each right-of-way shall contain terms and conditions which will...minimize damage to the scenic and esthetic values."

FLPMA's legal mandate to protect the quality of scenic resources on public lands is carried out by BLM and detailed in BLM's Visual Resource Management (VRM) system, described below.

#### 5.1.2.1.2 U.S. Department of Agriculture, Forest Service

For purposes of managing visual resources of lands within their jurisdiction, the USFS applies an inventory and assessment system known as the Scenery Management System (SMS). Adopted in 1995, the SMS establishes management goals to describe the level of modification associated with land use activity that is acceptable in a given area. These standards or SIOs range from Very High, which is typically applied only to highly sensitive landscapes such as wilderness areas or special classified areas, to Very Low, a standard that allows land use activity that may appear dominant in relationship to the natural landscape while not completely harmonizing with the natural setting (USDA 1995). Only one SIO class applies to any given area. It is important to note that the SIO does not necessarily represent current scenery conditions, but instead is a guideline for forest management objectives over time (Table 5.1-3).

**Table 5.1-3. USFS Scenery Management System Scenic Integrity Objectives**

| Scenic Integrity Objective (SIO) | Characteristics |
|---|---|
| Very High | This SIO generally provides for ecological changes only. This refers to landscapes where the valued (desired) landscape character is intact with only minute, if any, deviations. The existing landscape character and sense of place is expressed at the highest possible level. The landscape is unaltered. |
| High | This SIO is used for landscapes where the valued landscape character “appears intact.” Deviations may be present, but they must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident. |
| Moderate | This SIO is used for landscapes where the valued landscape character “appears slightly altered.” Noticeable deviations must remain visually subordinate to the landscape character being viewed. |
| Low | This SIO is used for landscapes where the valued landscape character “appears moderately altered.” Deviations begin to dominate the valued landscape character being viewed but they borrow value attributes such as size, shape, edge effect and pattern of natural openings, vegetative type changes, or architectural styles outside the landscape being viewed. They should not only appear as valued character outside the landscape being viewed but should be compatible or complimentary to the character within. |

Source: USFS 1995

#### 5.1.2.1.3 U.S. Department of Agriculture, Forest Service. Revised Draft Land Management Plan for the Sequoia National Forest

Approximately 0.4 miles of the GKR Project alignment at the northern terminus cross the SNF. The Draft SNF Land and Resource Management Plan establishes management objectives for this area. The project crosses part of the SNF with SIOs of High; where, as noted in Table 5.1-3, deviations may be present but they must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident.

#### 5.1.2.1.4 U.S. Department of Agriculture, Forest Service. Los Padres National Forest Land and Resource Management Plan

Approximately 450 feet of the GKR Project alignment in Segment 2 and one tower are located in the LPNF. The LPNF Land and Resource Management Plan establishes management objectives for this area. This area of the Los Padres National Forest has SIO of High; where, as noted in Table 5.1-3, deviations may be present but they must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident.

### *5.1.2.2 State*

#### 5.1.2.2.1 California Department of Transportation: Scenic Highway Program

The State Scenic Highway Program—a provision of Sections 260 through 263 of the Streets and Highways Code—was established by the Legislature in 1963 to preserve and enhance the natural beauty of California. The State Scenic Highway System includes highways that are either eligible for designation as scenic highways or have been designated as such. The status of a State Scenic Highway changes from “eligible” to “officially designated” when the local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives the designation from Caltrans. A city or county may propose adding routes with outstanding scenic elements to the list of eligible highways. However, State legislation is required. There are no scenic highways from which the GKR Project could be visible.

#### 5.1.2.2.2 California State Parks Office of Historic Preservation (OHP) California Landmarks and Points of Historic Interest

The Office of Historic Preservation (OHP) is responsible for administering federally and state mandated historic preservation programs to further the identification, evaluation, registration, and protection of California's historic resources including California Historic Landmarks and Points of Historic Interest. These resources are buildings, sites, features, or events that are of statewide significance and have anthropological, cultural, military, political, architectural, economic, scientific, or technical, religious, experimental, or other historical value.

Listed on the National Registry of Historic Places, Fort Tejon State Historic Park is a designated California Landmark that includes restored adobes from the original fort and the park's museum features exhibits on army life and local history. The park also has a number of noteworthy 400 year old valley oak trees.

### *5.1.2.3 Local*

The CPUC has sole and exclusive state jurisdiction over the siting and design of the GKR Project. Pursuant to GO 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the GKR Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

#### 5.1.2.3.1 Kern County General Plan

Section 2.3.9, Scenic Route Corridors, of the Circulation Element recognizes several Caltrans-designated "Eligible State Scenic Highways" within the county including portions of US 395 and SR-58 (refer to Table 5.1.3 in Section 5.1.1.2, Scenic Resources). In addition, the Land Use, Open Space, and Conservation Element addresses visual resources and aesthetics primarily in commercial and industrial settings, outdoor storage, and landscaping. It also includes general policies for the protection of oak woodlands and the conservation of open space (Section 1.10, 10, Oak Tree Conservation, Policies 65 and 66) (Kern County 2009).

#### 5.1.2.3.2 Kern County Zoning Ordinance

Section 19.81 of the Kern County Zoning Ordinance (Dark Sky Ordinance) provides principles for ensuring that the "natural dark skies" that are considered part of the existing character of Kern County are maintained. The Dark Sky Ordinance includes general requirements for light shielding, fixture types, and mounting heights.

#### 5.1.2.3.3 Los Angeles County General Plan

The Conservation and Open Space Element of the County of Los Angeles General Plan contains one policy related to protection of aesthetic resources, which calls for the protection of the visual quality of scenic views from public roads, trails, and key vantage points.

#### 5.1.2.3.4 Metropolitan Bakersfield General Plan

A portion of the route travels through the planning area guided by the Metropolitan Bakersfield General Plan, which contains general policies related to aesthetic resources and planning for visually pleasing development within the city. The GKR Project crosses a Class 3 bikeway listed in the current Circulation Element of the General Plan which runs along Breckenridge Road, and a portion of the route parallels a Class 2 Bikeway which runs along SR-178.

## 5.1.3 Impact Questions

### *5.1.3.1 Impact Questions*

The significant criteria for assessing the impacts to aesthetics come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Have a substantial adverse effect on a scenic vista
- Substantially damage scenic resources within a state scenic highway, including, but not limited to trees, rock outcroppings, and historic buildings
- In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area

### *5.1.3.2 Additional CEQA Impact Questions*

There are no CPUC-identified additional CEQA impact questions.

## 5.1.4 Impact Analysis

### *5.1.4.1 Visual Impact Analysis*

#### 5.1.4.1.1 Would the project have a substantial adverse effect on a scenic vista?

##### *5.1.4.1.1.1 Construction*

**No Impact.** For the purpose of this evaluation, a scenic vista is defined as a distant public view along or through an opening or corridor that is recognized in land management documents. By this definition, there are no scenic vistas in the area from which the GKR Project would be visible. Therefore, the GKR Project would not result in effects on a scenic vista.

##### *5.1.4.1.1.2 Operations*

**No Impact.** For the purpose of this evaluation, a scenic vista is defined as a distant public view along or through an opening or corridor that is recognized in land management documents. By this definition, there are no scenic vistas in the area from which the GKR Project would be visible. Therefore, the project would not result in effects on a scenic vista.

#### 5.1.4.1.2 Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

##### *5.1.4.1.2.1 Construction*

**No Impact.** As noted above, a review of the California Scenic Highway Program indicates the GKR Project is not visible from a designated or eligible state scenic highway; thus, the GKR Project will not affect or substantially damage scenic resources within a State Scenic Highway. Therefore, there will be no impact.

#### *5.1.4.1.2.2 Operations*

**No Impact.** As noted above, a review of the California Scenic Highway Program indicates the GKR Project is not visible from a designated or eligible state scenic highway; thus, the GKR Project will not affect or substantially damage scenic resources within a State Scenic Highway. Therefore, there will be no impact.

### 5.1.4.1.3 Would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings?

#### *5.1.4.1.3.1 Construction*

**Less than Significant Impact.** Temporary construction-related visual impacts resulting from the temporary presence of equipment, materials, and work crews along the GKR Project alignment, staging and work areas, and stringing sites would not substantially degrade the existing visual character of the landscape. To varying degrees, construction activity will be noticeable to some local residents, motorists, and recreational visitors. Construction activities will take place over an approximate 2-year period, but this will be considerably shorter in duration at any one location. Trees or portions of trees that encroach on existing access and spur roads may be trimmed or removed to facilitate the safe movement of construction equipment. Similarly, trees or portions of trees within or adjacent to stringing sites, construction laydown areas, construction work areas, staging areas, and helicopter landing zones may be trimmed or removed to permit the safe operation of construction equipment; however, the locations of these areas will be selected to minimize the trimming or removal of trees. With these noted exceptions, project construction is not anticipated to require large-scale removal of trees, and effects on existing vegetation will be limited to as-needed tree trimming and some removal of shrubs and other low growing vegetation that encroach upon access and spur road setbacks required for safe passage of material and equipment. If restoration and/or revegetation occurs within sensitive habitats, a habitat restoration and/or revegetation plan(s) would be developed by SCE with the appropriate resource agencies and implemented after construction is complete. In general, the visual effects of vegetation removal will be minor and temporary, and not noticeable to the public. Therefore, the impact would be less than significant.

During construction, migration of fugitive dust from the construction sites would be limited by control measures set forth by regional air quality management districts; these measures may include the use of water trucks and other dust control measures. Minor disturbance of land within and along the GKR Project alignment will occur as a result of installing replacement poles and removing existing structures. In addition, minor land disturbance may occur at some of the temporary staging and work areas that will be established as part of the project construction; these areas will generally be located on disturbed land located near or on the existing GKR Project alignment. A limited degree of visual contrast could occur as a result of land disturbance activity such as creation of newly exposed soil areas; however, because SCE would restore all areas that would be temporarily disturbed by construction including locations where structures are removed, staging areas, construction work areas, and stringing sites, among others to as close to pre-construction conditions as feasible, or to the conditions agreed upon between the landowner and SCE following the completion of construction of the project, the effect would be minimized so that the disturbed areas will blend in with the surrounding landscape setting. If restoration and/or revegetation occurs within sensitive habitats, a habitat restoration and/or revegetation plan(s) will be developed by SCE with the appropriate resource agencies and implemented after construction is complete. These measures would reduce visual contrast and potential visibility of land disturbance resulting from temporary construction activities. As a result, any temporary visual character degradation resulting from project construction would be less than significant.

Permanent visual change resulting from project construction would be incremental and would not substantially alter or degrade the existing visual character in the area. The project would primarily entail replacing or modifying existing subtransmission facilities along existing utility ROWs located in predominantly rural, sparsely populated portions of Kern and Los Angeles counties. Existing steel lattice structures and wood poles would be replaced with a combination of single TSPs, LWS poles and H-frame structures, typically in the same locations or adjacent to the structures being replaced. In contrast to the predominantly dark color of the existing weathered steel lattice towers and wood poles that characterize the existing alignments, the new replacement poles will be a predominantly lighter-colored dull gray galvanized steel. Existing conductor would be replaced with new, somewhat larger-diameter non-specular conductor.

With the exception of an approximately eight-mile segment that closely parallels the I-5 corridor through the Grapevine Canyon, the majority of the GKR Project alignment crosses largely undeveloped open space and private agricultural land, with small numbers of widely-dispersed residences and primarily situated away from public roadways. Throughout much of the project area, the modifications along the existing alignment would in many cases be visible to motorists or residents within the context of a working landscape with considerable modification related to agricultural activity, where irrigation conveyance infrastructure such as pumps, canals and overhead sprinklers, along with agricultural processing, storage and transport facilities are established, visible landscape features. Additionally, local power and distribution lines are characteristic features along rural roadways crossed or paralleled by the project. Although distant, open views toward the project are potentially available from some locations in the project area, the frequent atmospheric haze within the San Joaquin Valley, and the effects of topography and backdrop conditions within the Tehachapi Mountains, generally limit visibility of the project to near and medium-range views. As a result, visual change associated with the project would be most noticeable where the alignment closely parallels or crosses paved roadways and where the alignment crosses or passes in close proximity to residential areas or public recreation areas with close-range views of project elements.

Figures 5.1-3a and b and 5.1-4a and b, showing existing and post-Project views as seen from two KOPs within Landscape Unit 1, portray views from SR-58, where the GKR Project crosses this heavily-traveled highway approximately 5 miles east of Bakersfield, as well as along an approximately 12.5 mile portion of Towerline Road south of SR-58 that is paralleled by the alignment and where Project components are seen by both local motorists and dispersed rural residents along a roadway primarily serving the surrounding farm operations. Figure 5.1-3b shows that where the alignment crosses SR-58, existing lattice structures are replaced with narrower-profile galvanized TSPs that would be incrementally less visible compared with the existing Project towers seen by highway motorists. In a view from along Towerline Road, Figure 5.1-4b illustrates that prominent existing weathered steel lattice H-frame structures with complex profiles seen within the flat San Joaquin Valley agricultural landscape would be replaced by more-slender, light grey LWS poles. Although somewhat taller than the structures being replaced in this location, the new poles will be seen within the context of an existing adjacent power line, supported by wood poles which are more similar in form compared to the form of the lattice structures being replaced. Both KOP simulations demonstrate that the dull grey galvanized finish and the narrower profile of the new poles, compared with the lattice structures being replaced, would diminish the visual contrast of the project when seen against the predominantly light-colored sky and landscape backdrop that is characteristic of the valley environment.

Figures 5.1-5a and b shows existing and post-Project KOP views within Landscape Unit 2, near the entrance to Fort Tejon State Historic Park, a designated California Landmark listed on the National Registry of Historic Places. This view from a parking lot adjacent to I-5 shows two existing weathered steel lattice towers replaced with two galvanized steel TSPs of approximately the same height. The slender vertical form of the new structures is seen within the context of a number of nearby structures that are similar in form, including wood utility poles supporting power and communication lines visible in the foreground, as well as tubular steel structures supporting cellular phone equipment, visible beyond the overpass across I-5. Figure 5.1-5b shows that the replacement of lattice towers with new monopoles results in a more uniform appearance of built structures in the landscape, thereby incrementally reducing the level of visual contrast.

Near Gorman Substation, the GKR Project alignment descends the southern flank of the Tehachapi Mountains, and more open views toward the project are available from the I-5 freeway corridor. Figures 5.1-6a and b, an existing and post-Project KOP view from along this portion of I-5 demonstrates that the level of project visibility is diminished due to backdrop conditions and viewing distance.

In Landscape Unit 3 local residents will see project components to varying degrees from locations within the hills above Cummings Valley where the project passes within several hundred feet of residential properties. However, as demonstrated in Figure 5.1-7a and b, which show existing and post-project views from a KOP location within this area, while project elements are potentially noticeable to some residential viewers, in many instances the potential visibility of project components would be diminished by screening provided by surrounding vegetation in combination with color and texture characteristics of the landscape backdrop.

As discussed above and summarized on Table 5.1-4, as well as demonstrated by the set of visual simulations from KOPs presented on Figures 5.1-3a and b through 5.1-7a and b, the incremental change associated with the project would not substantially alter or degrade the existing landscape or visual character in this area. As a result, the visual impact will be less than significant.

##### *5.1.4.1.3.2 Operations*

**No Impact.** Operation activities required for the rebuilt power lines would not change from those currently required for the existing system; thus, no operation-related impacts to aesthetic conditions would occur.

#### 5.1.4.1.4 Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

##### *5.1.4.1.4.1 Construction*

**Less than Significant Impact.** Most construction will take place during daylight hours; however, at limited times some construction along the GKR Project alignment may be required or finished at night, and these activities will require lighting for safety. Any required lighting would be limited to an individual work area and would be temporary in nature. Staging areas may be lit for staging and security; and lighting would be directed on site and away from potentially sensitive receptors. Non-specular conductors and dulled galvanized steel poles will replace existing components, thus reducing potential glare. Therefore, the project will not result in a substantial light or glare effect and the impact would be less than significant.

##### *5.1.4.1.4.2 Operations*

**No Impact.** No new permanent lighting is proposed for the GKR Project. Operation activities required for the rebuilt subtransmission lines will not change from those currently required for the existing system; thus, no operation-related impacts to day or nighttime conditions would occur.

### *5.1.4.2 Analysis of Selected Viewpoints*

The information requested in the CPUC's *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments* document is, as allowed in the Guidelines, contained in the Visual Resources Technical Report in Appendix J.

### *5.1.4.3 Visual Simulation*

Photographs were taken using a digital single-lens reflex (SLR) camera with standard 50-millimeter lens equivalent, which represents an approximately 40-degree horizontal view angle. Photography viewpoint locations were documented in the field using photo log sheet notation, global positioning system (GPS) recording, and basemap annotation. Digital aerial photographs and Project design information supplied by SCE and Arcadis provided the basis for developing three–dimensional computer modeling of the new Project components. For each simulation viewpoint, viewer location was input from GPS data using 5 feet as the assumed eye level. Computer "wireframe" perspective plots were overlaid on the simulation photographs to verify scale and viewpoint location. Digital visual simulation images were then produced based on computer renderings of the three-dimensional modeling combined with selected digital site photographs. The simulations presented on Figures 5.1-3 through 5.1-7 consist of two full-page images designated "a" and "b," with the existing views shown in the "a" figure and the after visual simulations in the "b" figure.

### *5.1.4.4 Analysis of Visual Change*

The set of visual simulations presented on Figures 5.1-3 through 5.1-7 documents the GKR Project-related visual change that would occur at five KOPs, and provides the basis for evaluating potential visual effects associated with the GKR Project from these key public views. The methodology employed for preparing the simulations includes systematic site photography, computer modeling, and digital rendering techniques.

This section includes a description of the GKR Project-related change and an evaluation of potential visual effects on key public views, primarily as represented by the set of five KOP visual simulations. Table 5.1-4 presents an overview including viewpoint location with corresponding visual sensitivity factor(s); approximate viewing distance; and summary of visible change and potential effect that would occur at each KOP location. As summarized in Table 5.1-4 and detailed under discussion of the three Landscape Units, the visual change associated with Project modifications would not substantially alter existing visual conditions in the GKR Project area.

**Table 5.1-4. Summary of Visual Change at KOPs**

| **Photograph number and Location *(Figure number)*** | **Visual Sensitivity Factor(s)** | **Viewing Distance** | **Visual Change and Effect** |
|---|---|---|---|
| **Landscape Unit 1** | | | |
| KOP 4. SR-58 looking east *(Figures 5.1-3a and b)* | • Well-traveled public roadway<br>• Project crossing | 1,800 feet | • Monopoles with more slender profile replace existing lattice structures.<br>• Change from double circuit to single circuit subtransmission alignment means fewer overhead conductors spanning the roadway.<br>• Overall change would not substantially affect existing view. |
| KOP 6. Towerline Road looking north *(Figures 5.1-4a and b)* | • Proximity to residences<br>• Public roadway | 130 feet | • Somewhat taller LWS poles with a more slender profile replace existing lattice steel H-frame structures. |

**Table 5.1-4. Summary of Visual Change at KOPs**

| **Photograph number and Location** ***(Figure number)*** | **Visual Sensitivity Factor(s)** | **Viewing Distance** | **Visual Change and Effect** |
|---|---|---|---|
| | | | • Dulled galvanized finish reduces visibility of new poles when seen against light colored landscape and sky backdrop.<br>• Change from double circuit to single circuit subtransmission alignment means fewer insulators and conductors visible along a public roadway.<br>• Increased height of replacement poles does not affect views of landscape backdrop, and overall change would not substantially affect existing view. |
| **Landscape Unit 2** | | | |
| KOP 9. Fort Tejon State Historic Park looking north *(Figures 5.1-5a and b)* | • Proximity to public recreation area<br>• Proximity to California State Historical Monument | 540 feet | • TSPs with similar height and a more slender profile replace existing lattice steel H frame structures.<br>• Simple vertical form and dulled galvanized finish reduces visual contrast of new poles compared to complex form of existing lattice structures.<br>• Overall change would not substantially affect existing view. |
| KOP 13. I-5 near Gorman looking southeast *(Figures 5.1-6a and b)* | • Proximity to heavily-traveled freeway corridor | 0.5 mile | • Taller steel monopoles replace existing lattice steel towers.<br>• Dulled galvanized finish reduces visibility of new poles when seen against light colored landscape backdrop.<br>• Increased height of replacement poles does not noticeably alter views of Tehachapi Mountains in backdrop, and overall change would not substantially affect existing view. |
| **Landscape Unit 3** | | | |
| KOP 15. Quail Drive near Comanche Point Road looking northwest *(Figures 5.1-7a and b)* | • Proximity to residence | 175 feet | • Slightly taller LWS poles with a more slender profile replace existing lattice steel H-frame structures.<br>• Dulled galvanized finish reduces visibility of new poles when seen against backdrop of light-colored sky.<br>• Overall change would not substantially affect existing view. |

#### 5.1.4.4.1 Landscape Unit 1

Extending approximately 38 miles from the entrance to Kern River Canyon across the Sierra Nevada foothills and the southeastern edge of the San Joaquin Valley, the GKR Project alignment in Landscape Unit 1 traverses relatively sparsely populated range land and an expansive agricultural landscape of cropland and orchards, where largely open, somewhat distant views of project elements predominate. Close-range public views are limited to where the alignment crosses SR-58, as well as along an approximately 12.5 mile stretch of Towerline Road, a local farm road paralleled by the project with widely dispersed residences.

##### *5.1.4.4.1.1 Figure 5.1-3: Visual Simulation: SR 58 Looking East (KOP 4)*

Approximately eight miles southwest of the existing Kern River 1 Hydroelectric Substation the GKR Project alignment emerges from the undulating topography of the southern Sierra foothills and crosses SR-58, a well-traveled, four lane expressway connecting Bakersfield with communities to the east including Tehachapi and Mojave. Figure 5.1-3a is an eastbound highway perspective showing the characteristically flat agricultural landscape near the alignment crossing. Fallow fields and a citrus orchard can be seen against a backdrop of low, rolling hills and distant mountains, and in the center of the view a pair of project lattice towers are visible to the left and right of the highway overpass at a distance of approximately 1,800 and 2,000 feet respectively. The tops of the towers extend slightly above the distant horizon and light-colored backdrop. The project structures, along with a number of other vertical elements including wood utility poles, isolated trees and a highway light standard, punctuate the largely horizontal composition of the landscape.

The Figure 5.1-3b simulation shows that two TSPs have replaced the existing project lattice towers. The design of the new structures requires only three crossarms because the existing double circuit configuration in this project segment is replaced with a single circuit configuration, and the number of overhead conductors would be reduced to three from six. The monopole form of the TSP has a simpler, more-slender profile compared with that of the existing lattice structures to viewers, while the dulled galvanized finish of the new poles would minimize visual contrast of these project components against the landscape backdrop. A comparison of Figures 5.1-3a and 5.1-3b demonstrates that the visual effect of the new structures' narrower, simpler form and the reduced number of overhead conductors represents an incremental visual change that would not substantially affect the existing landscape character seen by motorists traveling along SR-58.

##### *5.1.4.4.1.2 Figure 5.1-4: Visual Simulation: Towerline Road looking North (KOP 6)*

Taken approximately 8.8 miles south of the SR-58 crossing and approximately one mile east of the community of Arvin, Figure 5.1-4a is a view looking north along a public farm road paralleled by the GKR Project alignment. Project lattice H-frame towers line the roadway on the left, and an unrelated overhead line is supported by wood poles along the right side of the roadway. Within this primarily homogenous agricultural setting the structures in the foreground are prominent vertical elements while those in the distance are less visible, becoming indistinct where they recede into the hazy backdrop. Widely dispersed rural residential properties facing this roadway are typically partially surrounded by stands of trees, as depicted in the foreground on the right, as well as in the distance in the center of the view.

The Figure 5.1-4b simulation shows steel monopoles have replaced existing project lattice H-frame towers. Although taller than the structures being replaced, the overall form of the new poles is simpler and more similar to other nearby existing utility elements, including the array of wood poles seen on the right. The visual simulation also shows that fewer insulators and overhead conductors are visible due to the existing double circuit configuration being replaced with a single circuit configuration. A comparison of Figures 5.1-4a and 5.1-4b demonstrates that the permanent removal of one Project circuit, together with the more uniform appearance of the new structures in relation to existing nearby utility elements, would represent an incremental improvement to the existing view, and that the increased height of the new poles would not substantially alter the overall visibility of the project in relation to the landscape setting. The introduction of the new replacement poles thus represents an incremental effect that would not result in a substantial change in the existing landscape character seen along the roadway.

#### 5.1.4.4.2 Landscape Unit 2

In Landscape Unit 2 the GKR Project largely parallels I-5 on its ascent through Grapevine Canyon within the Tehachapi Mountains, an area characterized by steep, sparsely vegetated terrain on both sides of the freeway corridor. In this environment, relatively close-range views of the GKR Project alignment can be seen from the roadway where it appears silhouetted against the sky at several highway crossing locations. Leaving I-5 near the Tejon Pass, the alignment descends the sparsely vegetated south face of the range before briefly coming into view of motorists along I-5 once again near Gorman, where more distant views of Project elements predominate.

##### *5.1.4.4.2.1 Figure 5.1-5: Visual Simulation: Fort Tejon State Historic Park looking North (KOP 9)*

Figure 5.1-5a shows two lattice steel towers situated approximately 550 feet away at the north edge of the parking entrance to Fort Tejon State Historic Park, located near the summit of Grapevine Canyon along Lebec Road. On the right, southbound lanes of the nearby heavily-traveled I-5 corridor can be seen along with roadside signage, guardrails, and fencing. Visible on the right and left, wood utility poles support telecommunication cable that spans the highway in the foreground and a wood pole supporting a power line spanning the highway can be seen a short distance beyond. A cell tower is visible in the center background beyond the highway overpass. A stand of deciduous oak trees screens the lower portion of the nearest Project tower. Along with overhead conductors, the dark steel framework of the upper portions of both towers is prominent where they contrast against the sky.

The Figure 5.1-5b simulation shows that two existing lattice steel towers and subtransmission conductors have been replaced with two TSPs and new conductor. Approximately the same height as the structures being replaced, the appearance of the new poles, when seen within the context of existing wood utility poles and tubular steel structures supporting cellular phone equipment, are more similar in form compared to the form of the lattice structures being replaced. The simulation demonstrates that the new replacement poles will present a more uniform appearance in relation to existing nearby utility and telecommunications elements, and that the height of the new poles would not alter the overall visibility of the GKR Project in relation to the landscape setting. The introduction of the new replacement poles thus represents an incremental effect that would not result in a substantial change in the existing landscape character seen from the Fort Tejon State Historic Park parking lot.

##### *5.1.4.4.2.2 Figure 5.1-6: Visual Simulation: I-5 near Gorman looking Southeast (KOP 13)*

Figure 5.1-6a depicts an open, grass covered slope that is a characteristic feature of a portion of the southern flank of the Tehachapi Range where I-5 descends from the summit of Tejon Pass, approximately one mile east of Gorman. Multiple wood utility poles seen in the foreground support an unrelated power line along with distribution and telecommunication lines along both sides of a frontage roadway across the freeway, as well as low metal fencing and galvanized steel highway guardrails. Gorman Substation can be seen beyond the guardrail near the center-right; the substation facility is partially screened by the cluster of low trees near the base of the hill. To the left approximately 0.5 mile away, several steel H-frame Project structures can also be seen against the light colored, grassy terrain that rises steeply beyond the substation.

The Figure 5.1-6b simulation shows the permanent removal of an existing lattice H-frame structure and the replacement of adjacent structures with taller LWS poles, and in the vicinity of the substation, with TSPs. When seen at this distance along the highway amidst substation components and adjacent non-Project related poles, the simulation shows that the new poles are not particularly visible despite the increased height of the new structures, and shows that the new structures near Gorman Substation are not particularly noticeable. A comparison of the Figure 5.1-6a and 5.1-6b existing view and simulation demonstrates that the new replacement poles are less noticeable against the surrounding terrain. This is most notably the case with the three more-distant poles, whose dull grey galvanized finish shows minimal contrast against the light-colored landscape backdrop. The simulation demonstrates that despite their increased height, the replacement poles do not significantly alter views of the Tehachapi Mountains in the backdrop, and overall, the change would not substantially affect the existing view from I-5.

#### 5.1.4.4.3 Landscape Unit 3

Within Landscape Unit 3 the GKR Project extends eastward from the San Joaquin Valley into the northeastern portion of the Tehachapi Mountains, initially crossing the largely uninhabited Tejon Hills before passing through an area of large-lot residential properties within the intermittently wooded hilly terrain west of Cummings Valley. In this area close-range range views of isolated portions of the GKR Project alignment are afforded some residents. Further to the east, where the alignment mostly parallels existing roads within the Cummings Valley, more open, long-range views of the GKR Project are available to motorists, while to varying degrees views of the GKR Project may also be available from some residential properties facing the roadway.

##### *5.1.4.4.3.1 Figure 5.1-7: Visual Simulation: Quail Drive near Comanche Point Road looking Northwest (KOP 15)*

Figure 5.1-7a is a view of the GKR Project taken from Quail Drive within the unincorporated community of Stallion Springs, a semi-rural residential community in the Tehachapi Mountains west of Cummings Valley. Seen from the roadway at a close-range distance of approximately 180 feet, a lattice steel H-frame structure is prominent in the foreground. On the right, portions of two similar Project structures are less noticeable where they are silhouetted against the sky on the hillside in the distance. A stand of semi-mature trees partially screen views toward the GKR Project from the residence seen on the left which is situated approximately 80 feet from the GKR Project tower in the foreground.

The Figure 5.1-7b simulation shows that three LWS poles have replaced the existing lattice H-frame towers. The locations of existing and replacement structures are approximately the same. Although slightly taller, the form of the poles that have replaced the lattice towers is simpler with a more slender profile that is not dissimilar in form to numerous existing wood utility poles that can be seen along the roadways within the subdivision. A comparison of Figures 5.1-7a and 5.1-7b demonstrates that the height of the new structures would not alter the overall visibility of the GKR Project in relation to the landscape backdrop. Compared with the existing dark weathered steel surface of the existing towers, the dulled galvanized steel color of the replacement structures results in a somewhat weaker visual contrast of the new structures when viewed against the predominant sky backdrop. In light of the changes described above, the overall introduction of the new replacement poles represents an incremental effect that would not substantially degrade the existing visual character of the landscape in the area.

### *5.1.4.5 Lighting and Marking*

This is addressed in Section 3.3.5.2, Aviation Lighting and/or Marking.

## 5.1.5 CPUC Draft Environmental Measures

SCE will implement, at the direction of the CPUC, the following CPUC-identified Draft Environmental Measure during construction of the GKR Project:

**Aesthetics Impact Reduction During Construction**

All project sites will be maintained in a clean and orderly state. Construction staging areas will be sited away from public view where possible. Nighttime lighting will be directed away from residential areas and have shields to prevent light spillover effects. Upon completion of project construction, project staging and temporary work areas will be returned to pre-project conditions, including re-grading of the site and re-vegetation or re-paving of disturbed areas to match pre-existing contours and conditions.

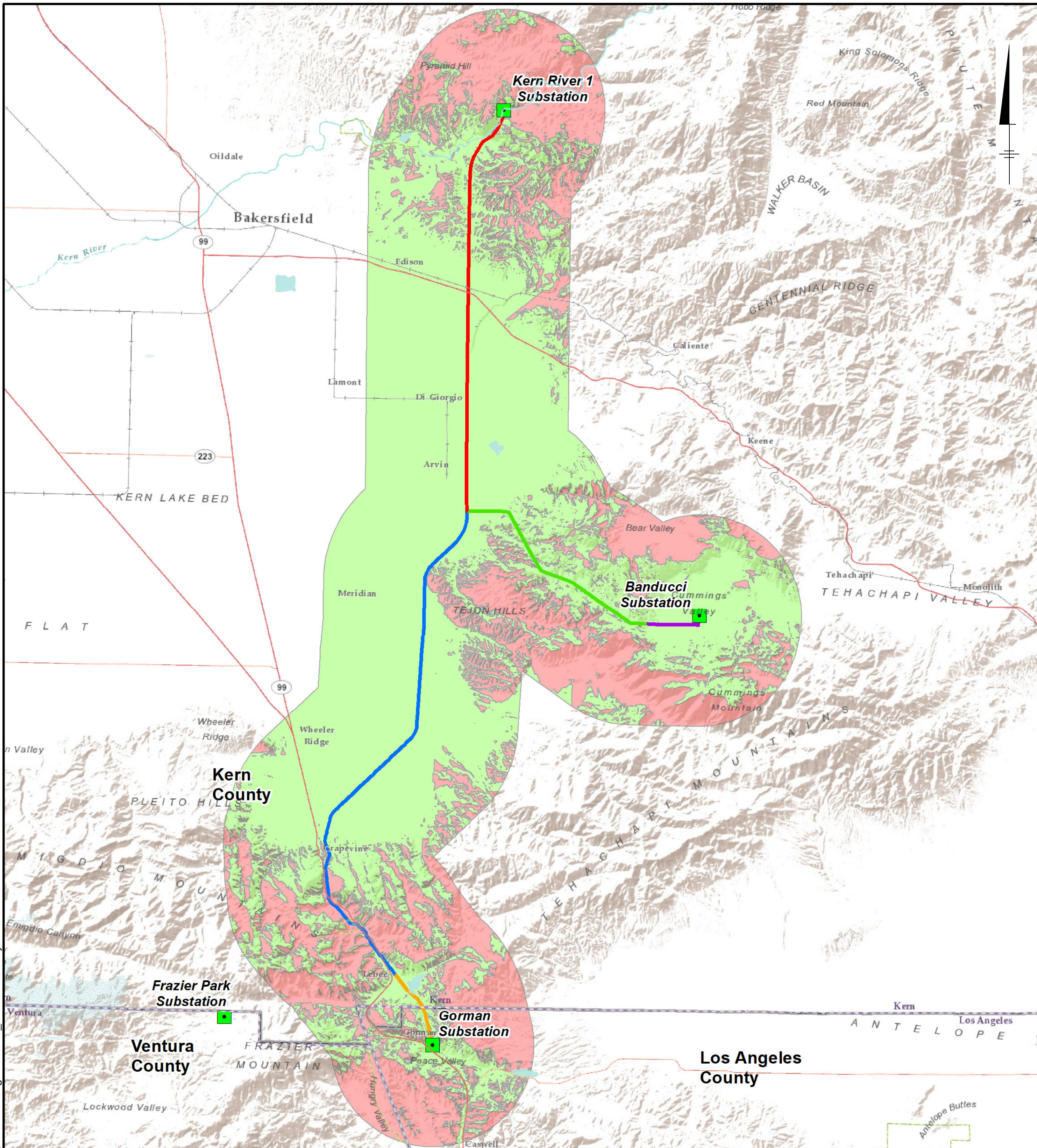

**GORMAN-KERN RIVER 66 kV PROJECT**

**PHOTOGRAPH VIEWPOINT LOCATIONS**

ARCADIS SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL® Company

FIGURE 5.1-1a

020420




Page 1 of 4

## Legend

- Substation
- Counties
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5

**Viewshed Analysis**

- Not Visible
- Visible

0 10
Miles

**GORMAN-KERN RIVER 66 kV PROJECT**

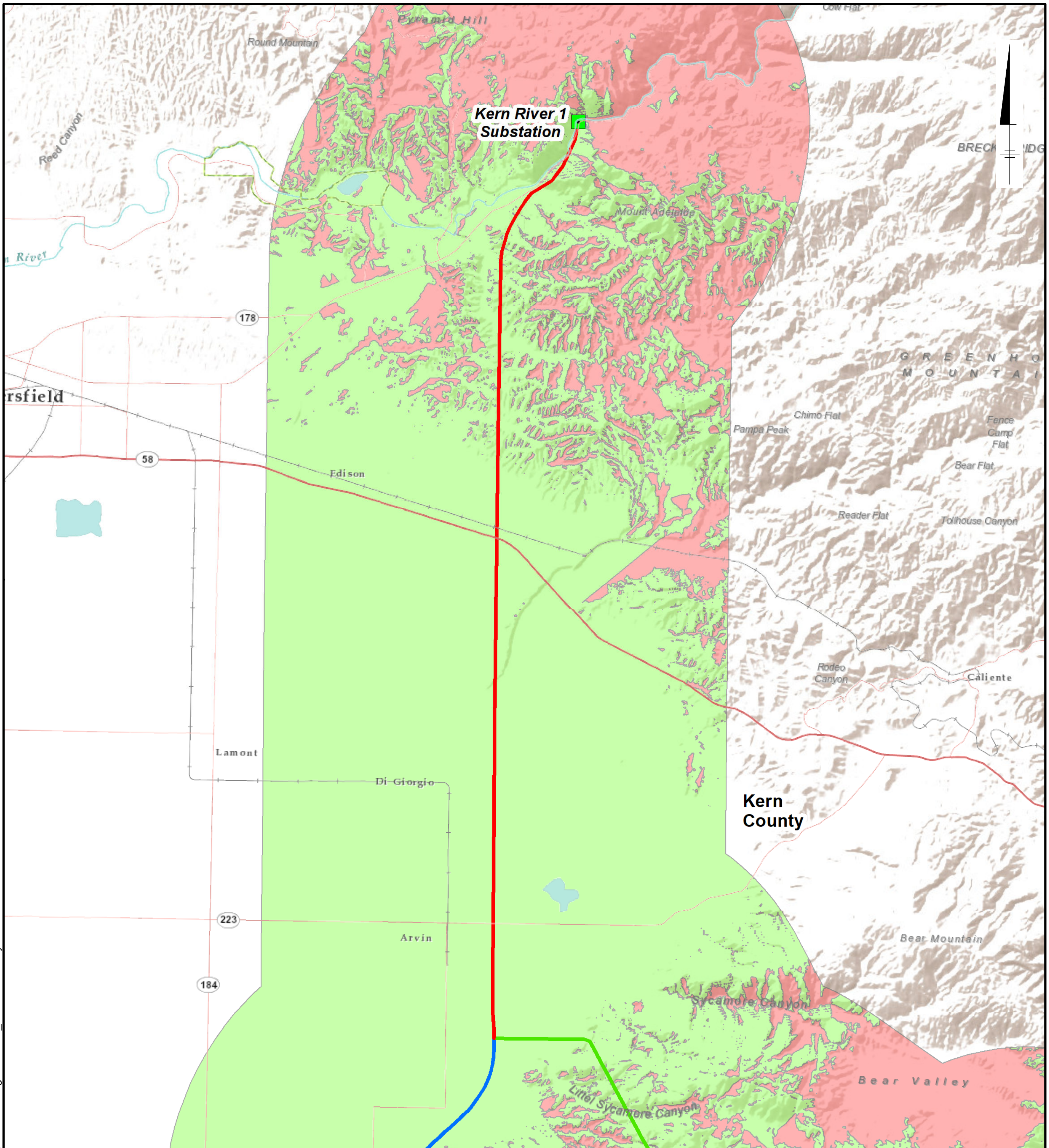
**VIEWSHED ANALYSIS**

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE 5.1-1b

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-1-1b_Viewshed Analysis.mxd 04/26/2021






## Legend

- Substation
- Segment 1
- Segment 2
- Segment 4
- Counties

**Viewshed Analysis**

- Not Visible
- Visible

0 4
Miles

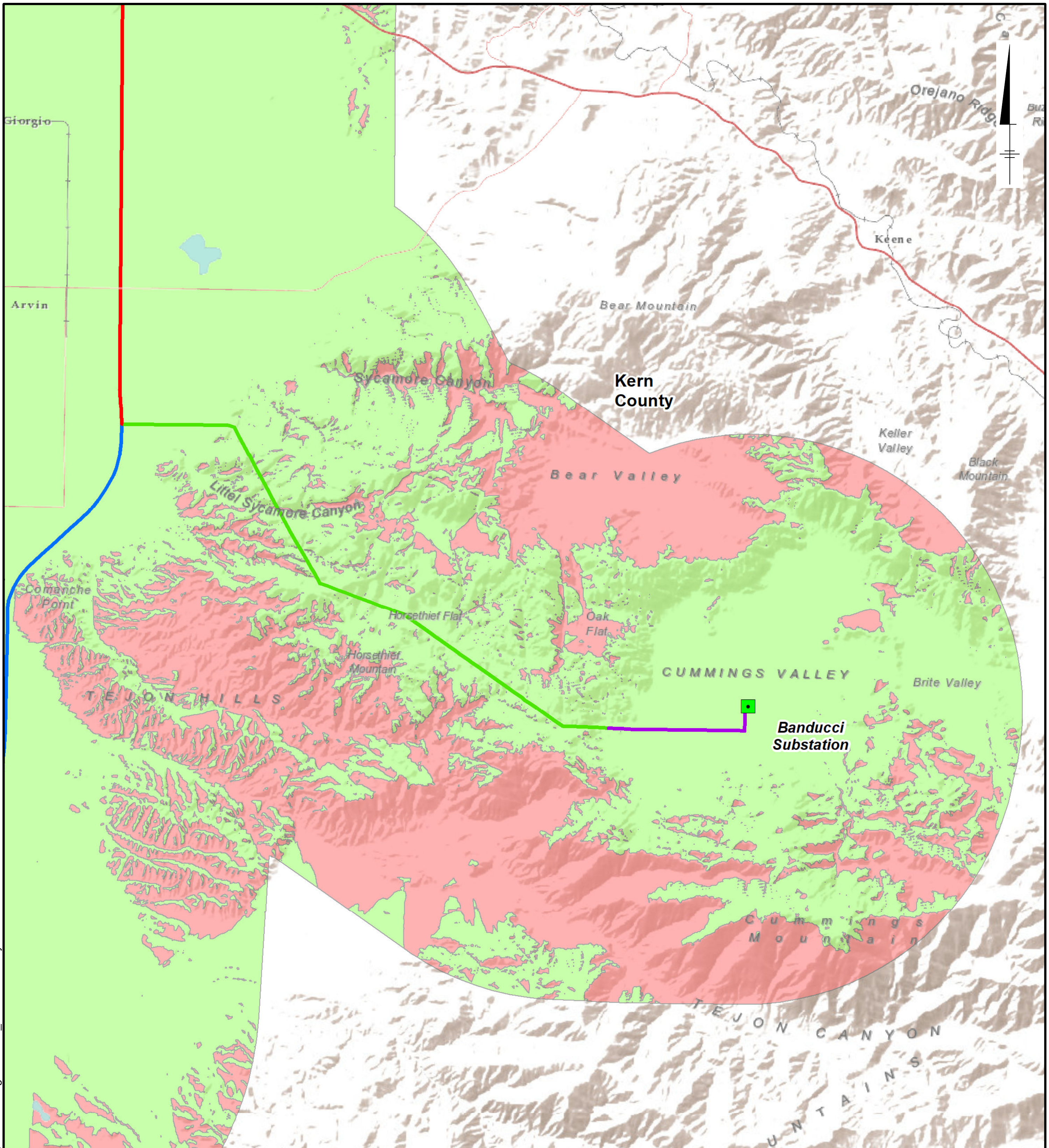
**GORMAN-KERN RIVER 66 kV PROJECT**

**VIEWSHED ANALYSIS**

ARCADIS SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL® Company

FIGURE 5.1-1b

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-1-1b_Viewshed Analysis.mxd 04/26/2021




## Legend

Substation
Counties
Segment 1
**Viewshed Analysis**
Segment 2
Not Visible
Segment 4
Visible
Segment 5

Page 3 of 4

0 4
Miles

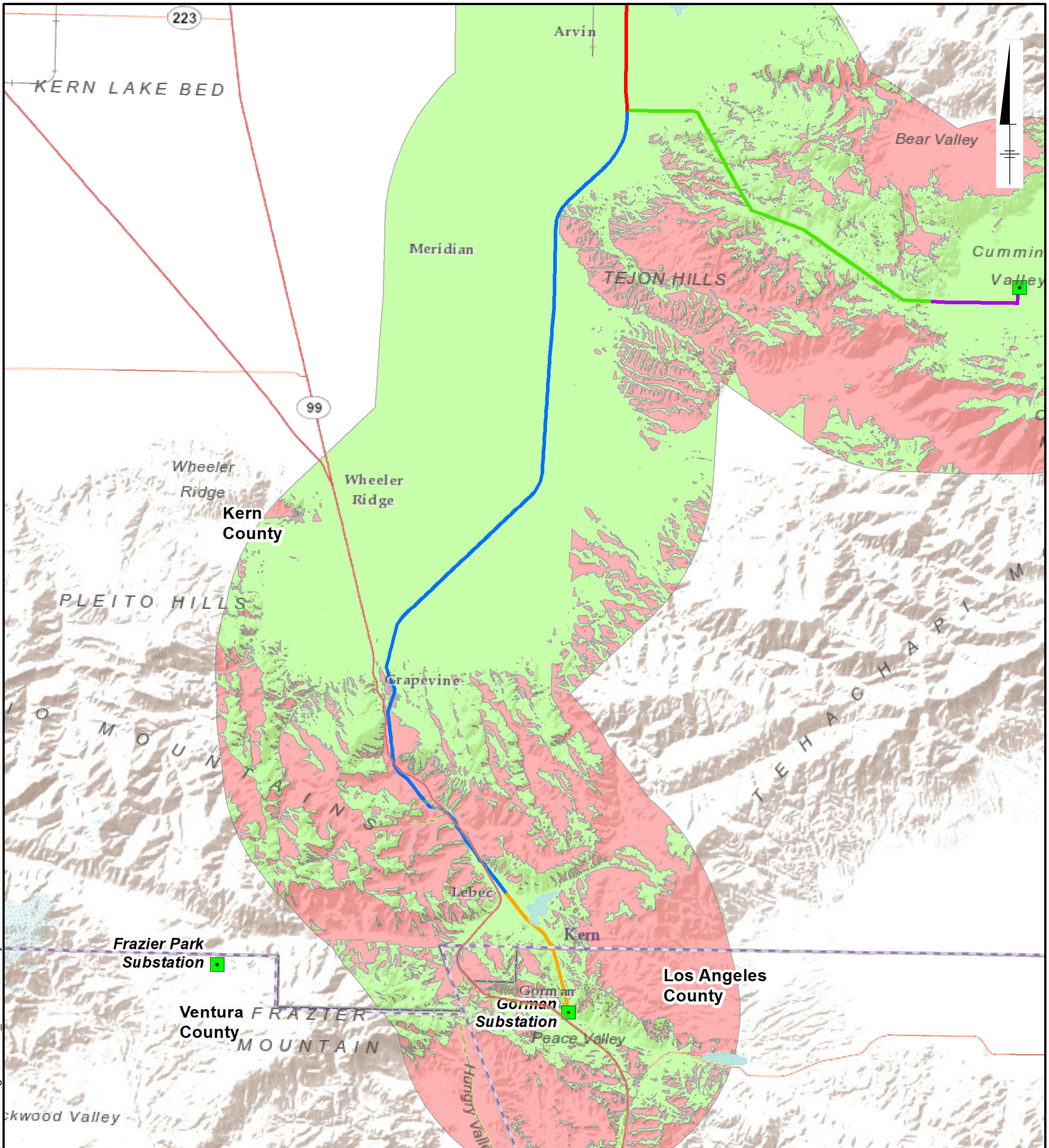
**GORMAN-KERN RIVER 66 kV PROJECT**

**VIEWSHED ANALYSIS**

ARCADIS
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE
**5.1-1b**

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-1-1b_Viewshed Analysis.mxd 04/26/2021




Page 4 of 4

**Legend**

Substation

Counties

Segment 1

Segment 2

Segment 3

Segment 4

Segment 5

**Viewshed Analysis**

Not Visible

Visible

0 6

Miles

**GORMAN-KERN RIVER 66 kV PROJECT**

**VIEWSHED ANALYSIS**

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE
**5.1-1b**

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-1-1b_Viewshed Analysis.mxd 04/26/2021


1. SR-178 near Kern River Substation looking southwest

2. SR-178 east of Bakersfield looking northeast

Refer to Figure 5.1-1a for photograph viewpoint locations

**GORMAN-KERN RIVER 66 kV PROJECT**

**REPRESENTATIVE PHOTOGRAPHS -- SEGMENT 1**

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

**FIGURE: 5.1-2a**

ENVIRONMENTAL VISION

020420

3. Breckenridge Road looking northeast

*4. SR-58 near Towerline Road looking east

Refer to Figure 5.1-1a for photograph viewpoint locations
* KOP; see Figure 5.1-3b for visual simulation

GORMAN-KERN RIVER 66 kV PROJECT

REPRESENTATIVE PHOTOGRAPHS -- SEGMENT 1

ARCADIS

SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

FIGURE: 5.1-2b

ENVIRONMENTAL VISION

020420

5. Towerline Road  looking south

*6. Towerline Road near Arvin looking north

Refer to Figure 5.1-1a for photograph viewpoint locations
* KOP; see Figure 5.1-4b for visual simulation

| | |
|---|---|
| GORMAN-KERN RIVER 66 kV PROJECT | |
| REPRESENTATIVE PHOTOGRAPHS -- SEGMENT 1 | |
| ARCADIS   SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL® Company | FIGURE: 5.1-2c |

ENVIRONMENTAL VISION
020420

7. Rancho Road near David Road looking east


8. I-5 near Grapevine Road looking south

Refer to Figure 5.1-1a for photograph viewpoint locations

**GORMAN-KERN RIVER 66 kV PROJECT**

**REPRESENTATIVE PHOTOGRAPHS -- SEGMENTS 1-2**

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE:
**5.1-2d**

ENVIRONMENTAL VISION
020420


*9. Fort Tejon State Historic Park looking north

10. El Tejon School looking south

Refer to Figure 5.1-1a for photograph viewpoint locations
* KOP; see Figure 5.1-5b for visual simulation

**GORMAN-KERN RIVER 66 kV PROJECT**

**REPRESENTATIVE PHOTOGRAPHS -- SEGMENT 2**

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE:
**5.1-2e**

ENVIRONMENTAL VISION
020420

11. I-5 near Lebec looking north

12. Tejon Safety Roadside Rest Area along I-5 looking northeast

Refer to Figure 5.1-1a for photograph viewpoint locations

**GORMAN-KERN RIVER 66 kV PROJECT**

**REPRESENTATIVE PHOTOGRAPHS -- SEGMENT 2**

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE: **5.1-2f**

ENVIRONMENTAL VISION
020420

*13. I-5 near Gorman Substation looking southeast

14. I-5 near Gorman Substation looking northwest

Refer to Figure 5.1-1a for photograph viewpoint locations
* KOP; see Figure 5.1-6b for visual simulation

ENVIRONMENTAL VISION
020420

| GORMAN-KERN RIVER 66 kV PROJECT | |
|---|---|
| REPRESENTATIVE PHOTOGRAPHS -- SEGMENT 3 | |
| ARCADIS SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL® Company | FIGURE: 5.1-2g |

*15. Quail Drive near Comanche Point Road looking northwest

16.Comanche Narrative Trail near Comanche Point Road

Refer to Figure 5.1-1a for photograph viewpoint locations
* KOP; see Figure 5.1-7b for visual simulation

ENVIRONMENTAL VISION

020420

**GORMAN-KERN RIVER 66 kV PROJECT**

**REPRESENTATIVE PHOTOGRAPHS -- SEGMENT 4**

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE:
**5.1-2h**

17. Banducci Road at St. Andrews Place looking west

18. Pellisier Road near Banducci Substation looking north

Refer to Figure 5.1-1a for photograph viewpoint locations

**GORMAN-KERN RIVER 66 kV PROJECT**

**REPRESENTATIVE PHOTOGRAPHS -- SEGMENT 5**

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

**FIGURE: 5.1-2i**

ENVIRONMENTAL VISION
020420

Existing View from SR-58 near Towerline Road looking east (KOP 4)

Refer to Figure 5.1-1a for photograph viewpoint locations

ENVIRONMENTAL VISION
020420

**GORMAN-KERN RIVER 66 kV PROJECT**

**EXISTING VIEW --**
**SR-58 NEAR TOWERLINE ROAD**

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

**FIGURE:**
**5.1-3a**


Visual Simulation of Proposed Project (KOP 4)

Refer to Figure 5.1-1a for photograph viewpoint locations

ENVIRONMENTAL VISION

020420

**GORMAN-KERN RIVER 66 kV PROJECT**

**VISUAL SIMULATION --**
**SR-58 NEAR TOWERLINE ROAD**

ARCADIS | SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL® Company

**FIGURE:**
**5.1-3b**

Existing View from Towerline Road near Arvin looking north (KOP 6)

Refer to Figure 5.1-1a for photograph viewpoint locations

ENVIRONMENTAL VISION

020420

GORMAN-KERN RIVER 66 kV PROJECT

EXISTING VIEW --
TOWERLINE ROAD NEAR ARVIN

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE:
5.1-4a


Visual Simulation of Proposed Project (KOP 6)

Refer to Figure 5.1-1a for photograph viewpoint locations

ENVIRONMENTAL VISION

020420

**GORMAN-KERN RIVER 66 kV PROJECT**

**VISUAL SIMULATION -- TOWERLINE ROAD NEAR ARVIN**

ARCADIS

SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

**FIGURE: 5.1-4b**


Existing View from Fort Tejon State Historic Park looking north (KOP 9)

Refer to Figure 5.1-1a for photograph viewpoint locations

## GORMAN-KERN RIVER 66 kV PROJECT

EXISTING VIEW --
FORT TEJON STATE HISTORIC PARK

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE:
5.1-5a

ENVIRONMENTAL VISION
020420


Visual Simulation of Proposed Project (KOP 9)

Refer to Figure 5.1-1a for photograph viewpoint locations

**GORMAN-KERN RIVER 66 kV PROJECT**

**VISUAL SIMULATION --**
**FORT TEJON STATE HISTORIC PARK**

ARCADIS | SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL® Company

**FIGURE: 5.1-5b**

ENVIRONMENTAL VISION
041421

Existing View from I-5 near Gorman Substation looking southeast (KOP 13)

Refer to Figure 5.1-1a for photograph viewpoint locations

ENVIRONMENTAL VISION

020420

GORMAN-KERN RIVER 66 kV PROJECT

EXISTING VIEW --
I-5 NEAR GORMAN SUBSTATION

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE:
5.1-6a


Visual Simulation of Proposed Project (KOP 13)

Refer to Figure 5.1-1a for photograph viewpoint locations

ENVIRONMENTAL VISION

020420

**GORMAN-KERN RIVER 66 kV PROJECT**

**VISUAL SIMULATION --**
**I-5 NEAR GORMAN SUBSTATION**

ARCADIS SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL® Company

**FIGURE:**
**5.1-6b**


Existing View from Quail Drive near Comanche Point Road looking northwest (KOP 15)

Refer to Figure 5.1-1a for photograph viewpoint locations

GORMAN-KERN RIVER 66 kV PROJECT

EXISTING VIEW --
QUAIL DRIVE NEAR COMANCHE POINT ROAD

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE:
5.1-7a

ENVIRONMENTAL VISION

020420


Visual Simulation of Proposed Project (KOP 15)

Refer to Figure 5.1-1a for photograph viewpoint locations

GORMAN-KERN RIVER 66 kV PROJECT

VISUAL SIMULATION --
QUAIL DRIVE NEAR COMANCHE POINT ROAD

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE:
5.1-7b

ENVIRONMENTAL VISION
020420

## 5.2 Agriculture and Forestry Resources

This Section of the PEA describes the agriculture and forestry resources in the area of the GKR Project and the potential impacts that may result from construction and operation of the GKR Project.

### 5.2.1 Environmental Setting

#### *5.2.1.1 Agricultural Resources and GIS*

The GKR Project alignment is located on lands identified as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. The alignment is located on lands under a Williamson Act contract. The GKR Project alignment is located on lands zoned for agricultural use and is located in areas subject to active agricultural use. The locations of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance are shown in Figureset 5.2-1. Lands under a Williamson Act contract are shown in Figure 5.2-2. Lands zoned for agricultural use are shown in Figureset 5.11-2.

##### 5.2.1.1.1 Unincorporated Kern County

The GKR Project alignment in unincorporated Kern County traverses lands identified as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. The GKR Project alignment in unincorporated Kern County traverses lands under a Williamson Act contract.

Lands traversed by the GKR Project alignment within unincorporated Kern County include those zoned A (Exclusive Agriculture), A-1 (Limited Agriculture), AWE (Exclusive Agriculture, Wind Energy Combining).

##### 5.2.1.1.2 Unincorporated Los Angeles County

No lands traversed by the GKR Project alignment in unincorporated Los Angeles County are identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. These lands are not under a Williamson Act contract.

Lands traversed by the GKR Project alignment within unincorporated Los Angeles County include those zoned A-2-2 (Heavy Agriculture).

##### 5.2.1.1.3 City of Arvin

Within the City of Arvin, the GKR Project alignment traverses lands identified as Prime Farmland. These lands are not under a Williamson Act contract. No lands traversed by the GKR Project alignment are zoned for agriculture.

##### 5.2.1.1.4 City of Bakersfield

Within the City of Bakersfield, the GKR Project alignment traverses lands identified as Prime Farmland and Farmland of Statewide Importance. These lands are not under a Williamson Act contract. Lands traversed by the GKR Project alignment within the City of Bakersfield are zoned A-HD (Agricultural-Hillside Development Overlay).

#### *5.2.1.2 Forestry Resources*

Section 12220(g) of the California Public Resources Code defines forest land as land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.

Public Resource Code Section 4526 states that "'Timberland' means land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees."

Timberland zoned Timberland Production is defined in Government Code Section 51104(g) as "an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h)."

The GKR Project alignment crosses forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), and timberland zoned Timberland Production (California Department of Conservation 2017a and b; CALFIRE 2015). Forest lands are shown in Figureset 5.2-3.

#### 5.2.1.2.1 Unincorporated Kern County

The GKR Project alignment in unincorporated Kern County traverses lands with greater than 10 percent tree cover (forest land or timberland). Lands traversed by the GKR Project alignment within unincorporated Kern County are zoned RF (Recreation Forestry).

#### 5.2.1.2.2 Unincorporated Los Angeles County

No lands traversed by the GKR Project alignment in unincorporated Los Angeles County are identified as forest land, timberland, or timberland zoned Timberland Production.

#### 5.2.1.2.3 City of Arvin

No lands traversed by the GKR Project alignment in the City of Arvin are identified as forest land, timberland, or timberland zoned Timberland Production.

#### 5.2.1.2.4 City of Bakersfield

No lands traversed by the GKR Project alignment in the City of Bakersfield are identified as forest land, timberland, or timberland zoned Timberland Production.

## 5.2.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the GKR Project.

### *5.2.2.1 Agriculture and Forestry Regulations*

#### 5.2.2.1.1 Federal

*5.2.2.1.1.1 Farmland Protection Policy Act*

The National Agricultural Land Study of 1980-1981 found that millions of acres of farmland were being converted out of agricultural production in the United States each year. The 1981 Congressional report, "Compact Cities: Energy-Saving Strategies for the Eighties" (Compact Cities report), identified the need for Congress to implement programs and policies to protect farmland and combat urban sprawl and the waste of energy and resources that accompanies sprawling development.

The Compact Cities report indicated that much of the sprawl was the result of programs funded by the Federal Government. With this in mind, Congress passed the Agriculture and Food Act of 1981 (Public Law 97-98) containing the Farmland Protection Policy Act (FPPA)—Subtitle I of Title XV, Section 1539-1549.

The final rules and regulations were published in the Federal Register on June 17, 1994. The FPPA and its implementing rules and regulations set forth provisions intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses.

#### 5.2.2.1.2 State

##### *5.2.2.1.2.1 Williamson Act*

The California Land Conservation Act of 1965 (Williamson Act) enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses as opposed to full market value. Local governments receive an annual subvention of forgone property tax revenues from the State via the Open Space Subvention Act of 1971.

California Government Code Section 51238 provides that, unless local organizations declare otherwise, the erection, construction, alteration, or maintenance of gas, electric, water, or communication facilities is compatible with Williamson Act contracts.

Kern County and Los Angeles County voluntarily participate in the Williamson Act program.

#### 5.2.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the GKR Project. Pursuant to GO 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the GKR Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

##### *5.2.2.1.3.1 Kern County General Plan*

The Kern County General Plan, Land Use, Open Space, and Conservation Element contains the following issues and goals related to agriculture:

> Issue: Conflicts over the use of agricultural land frequently occur. As is the case for other urbanizing regions, the loss of valuable agricultural lands to urban development is a prime concern.
>
> Issue: Land division, even where actual development does not take place, can also adversely affect the County's agricultural resource base. This is particularly a problem in extensive agriculture areas, such as rangeland, where land values can be significantly increased beyond values based on agricultural productivity.
>
> Goal 1: To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations which will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources, or diminish the other amenities which exist in the County.
>
> Goal 2: Protect areas of important mineral, petroleum, and agricultural resource potential for future use.
>
> Goal 5: Conserve prime agriculture lands from premature conversion.

##### *5.2.2.1.3.2 Kern County Zoning Ordinance*

Per Section 19.08.090 of the Kern County Zoning Ordinance, the provisions of the Ordinance do not apply to the construction, installation, operation and maintenance of the types of facilities that would be replaced under the GKR Project:

> 19.08.090 - Public utility uses—County review.
>
> The provisions of this title shall not be construed to apply to the construction, installation, operation and maintenance of public utility distribution and transmission lines or supporting towers, and poles and underground facilities for providing gas, water, electricity, or telephone and telegraph services by public utility companies or any other company under the jurisdiction of the California Public Utilities Commission. Additionally, the provisions of this title shall not apply to privately constructed, operated or maintained electrical transmission lines and towers, provided that said lines are constructed, maintained and operated in accordance with, and subject to, the requirements of the California Public Utilities Commission and further provided that said transmission lines are tied into a public utility grid system, and except as otherwise provided for in Chapter 19.64. Microwave and cellular transmission facilities shall be subject to the provisions of this title, except where local land use authority is expressly preempted by state or federal laws or regulations.

##### *5.2.2.1.3.3 Los Angeles County General Plan*

The Land Use Element contains the following goals and policies related to agricultural resources:

> Goal LU 6: Protected rural communities characterized by living in a non-urban or agricultural environment at low densities without typical urban services.
>
> Policy LU 6.1: Protect rural communities from the encroachment of incompatible development that conflict with existing land use patterns and service standards.
>
> Policy LU 6.2: Encourage land uses and developments that are compatible with the natural environment and landscape.
>
> Policy LU 6.3: Encourage low density and low intensity development in rural areas that is compatible with rural community character, preserves open space, and conserves agricultural land.

##### *5.2.2.1.3.4 Los Angeles County Zoning Ordinance*

Title 22 of the Los Angeles County Code of Ordinances is the zoning ordinance. The sections of Title 22 that address the zoning designations crossed by the GKR Project alignment do not list electric utility infrastructure as a prohibited use.

##### *5.2.2.1.3.5 City of Arvin General Plan, Land Use Element*

The Land Use Element contains the following goals and policies related to agricultural resources:

> Goal 13: Protect highly productive, prime agricultural lands from premature conversion to non-agricultural use.
>
> Policy LU-13.1 Encourage participation in Williamson Act contracts for agricultural lands within and adjoining the City of Arvin.
>
> Policy LU-13.2 Require that proposals to convert agricultural lands to non-agricultural use demonstrate a need for the conversion and create a benefit to the community.

> Policy LU-13.3 Promote increased parcel sizes in agricultural zones consistent with the acreage necessary for economic viability.
>
> Goal 14: Promote wise management of agriculturally productive soils to ensure their long-term viability in the production of food and fiber.
>
> Policy LU-14.1 Encourage good agricultural practices to maximize the useful life of the soils.
>
> Policy LU-14.2 Encourage cooperation among responsible agencies to protect the prime soils from dangers such as erosion and misuse

*5.2.2.1.3.6 City of Arvin Zoning Ordinance*

Title 17 of the Arvin Municipal Code is the City's land-use zoning ordinance. Section 17.50.110 - Public utility uses, states:

> The provisions of this title shall not be construed to apply to the construction, installation, operation and maintenance of public utility distribution and transmission lines, towers and poles and underground facilities for providing gas, water, electricity or telephone and telegraph services by public utility companies under the jurisdiction of the Public Utilities Commission of the state, provided, however, before any right-of-way for such transmission lines is acquired, the proposed route shall be submitted to the planning commission for review and recommendation.

*5.2.2.1.3.7 City of Bakersfield General Plan*

The General Plan does not contain any goals or policies relevant to the GKR Project and agricultural resources.

*5.2.2.1.3.8 City of Bakersfield Zoning Ordinance*

Title 17 of the Bakersfield Municipal Code is the City's land use zoning ordinance. The sections of Title 17 that address the zoning designations crossed by the GKR Project alignment do not list electric utility infrastructure as a prohibited use.

## 5.2.3 Impact Questions

### *5.2.3.1 Agriculture and Forestry Impact Questions*

The significant criteria for assessing the impacts to agriculture and forestry resources come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, to nonagricultural use
- Conflict with existing zoning for agricultural use, or a Williamson Act contract
- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))
- Result in the loss of forest land or conversion of forest land to non-forest use

- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use

### *5.2.3.2 Additional CEQA Impact Questions*

There are no CPUC-identified additional CEQA impact questions.

## 5.2.4 Impact Analyses

### *5.2.4.1 Agriculture and Forestry Impacts*

#### 5.2.4.1.1 Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, to nonagricultural use?

*5.2.4.1.1.1 Construction*

**No Impact.** The GKR Project alignment crosses lands identified as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. Construction work areas, staging areas, conductor stringing sites, and other construction-support areas will be established along the GKR Project alignment on lands designated as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. These areas will be established only temporarily and will be returned to as close to pre-construction conditions as feasible, or to the conditions agreed upon between the landowner and SCE, following the completion of construction of the GKR Project. Therefore, the establishment and use of construction-support areas will not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, to nonagricultural use except as directed by the landowner. Such conversion by landowner decree is not part of the GKR Project, as it is the intention of SCE to return all construction-support areas to their prior condition. Because of this, there would be no net conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, to nonagricultural use, and therefore there would be no impacts under this criterion.

*5.2.4.1.1.2 Operations*

**No Impact.** As presented in Chapter 3—Project Description, the GKR Project includes the replacement of existing subtransmission structures with new subtransmission structures at a one-to-one ratio, or at a better-than one-to-one ratio (i.e., more than one existing structure would be removed for each new subtransmission structure installed). New subtransmission structures would be installed proximate to existing subtransmission structures to be removed. New subtransmission structures will in large part be monopole structures; monopole structures require a smaller footprint of land to be cleared and to remain cleared around them than is required for the lattice structures that will be removed, and require an equivalent footprint to the H-frame structures that will be removed. As a result, there would be no net increase in the farmlands permanently disturbed by the GKR Project infrastructure, and there would be no net conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use.

Therefore no impacts would be realized under this criterion during operations and maintenance.

#### 5.2.4.1.2 Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

*5.2.4.1.2.1 Construction*

**No Impact.** The GKR Project would not conflict with existing zoning for agricultural use or a Williamson Act contract. No lands within Los Angeles County are located on lands under a Williamson

Act contract. In Kern County, the Agricultural Preserve Standard Uniform Rules identify the erection of electric utilities as a compatible use on lands under a Williamson Act contract.

The GKR Project traverses lands zoned for agricultural use in the City of Bakersfield (A-HD zoning), Kern County (A, A-1, and AWE), and Los Angeles County (A-2). The construction, operation, and maintenance of electric utility infrastructure is not listed as a prohibited use in the descriptions of these zoning classifications in their jurisdiction's respective zoning ordinances. Therefore, the project would not conflict with existing zoning for agricultural use.

Because the erection of electric utilities is listed as a compatible use on lands under a Williamson Act contract in Kern County, and because the project would not conflict with existing zoning for agricultural use, no impacts would occur under this criterion.

##### *5.2.4.1.2.2 Operations*

**No Impact.** As presented in Chapter 3—Project Description, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts would be realized under this criterion during operations and maintenance.

#### 5.2.4.1.3 Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

##### *5.2.4.1.3.1 Construction*

**No Impact.** No lands traversed by the GKR Project alignment are zoned as forest land, timberland, or Timberland Production. Therefore, there would be no impacts under this criterion.

##### *5.2.4.1.3.2 Operations*

**No Impact.** As presented in Chapter 3—Project Description, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts would be realized under this criterion during operations and maintenance.

#### 5.2.4.1.4 Would the project result in the loss of forest land or conversion of forest land to non-forest use?

##### *5.2.4.1.4.1 Construction*

**No Impact.** Forest lands which have a native tree density of 10 percent or greater as defined in Public Resources Code section 12220(g) are found along approximately 3.5 miles of the GKR Project alignment in the southern portion of Segment 2, northern portion of Segment 3, and central portion of Segment 4 (Figureset 5.2-3).

In Segments 2, 3 and 4, the replacement of existing subtransmission structures with new subtransmission structures installed proximate to the existing structures on forest lands would not result in the cover of the forest lands falling below the 10 percent density threshold, and thus there would be no loss of forest land as defined in Public Resources Code section 12220(g). In addition, no such lands would be converted to non-forest use as a result of construction of the GKR Project. Therefore, there would be no impacts under this criterion.

*5.2.4.1.4.2 Operations*

**No Impact.** As presented in Chapter 3—Project Description, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts would be realized under this criterion during operations and maintenance.

#### 5.2.4.1.5 Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

*5.2.4.1.5.1 Construction*

**No Impact.** Construction of the GKR Project would not involve any other changes in the existing environment that could result in the conversion of farmland to non-agricultural use or forest land to non-forest use. Therefore, no impacts would occur under this criterion.

*5.2.4.1.5.2 Operations*

**No Impact.** As presented in Chapter 3—Project Description, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts would be realized under this criterion during operations and maintenance.

### *5.2.4.2 Prime Farmland Soil Impacts*

As presented in Chapter 3—Project Description, the GKR Project includes the replacement of existing subtransmission structures with new subtransmission structures at a one-to-one ratio, or at a better-than one-to-one ratio (i.e., more than one existing structure would be removed for each new subtransmission structure installed). New subtransmission structures would be installed proximate to existing subtransmission structures to be removed. Because there would be no net increase in the number of subtransmission structures installed on lands designated as Prime Farmland, there would be no net increase in the acreage of Prime Farmland permanently impacted by the GKR Project.

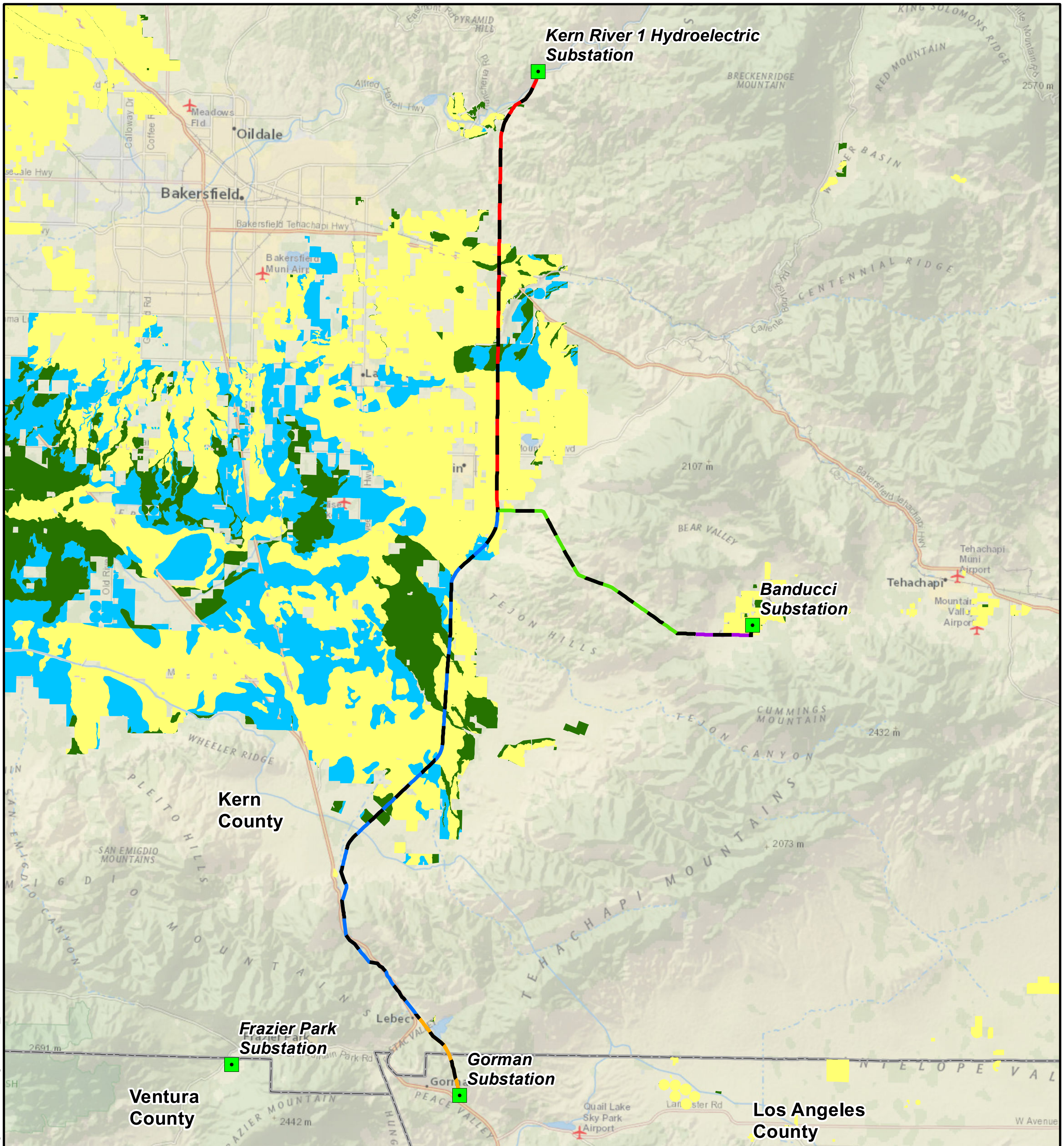
Construction work areas, staging areas, conductor stringing sites, and other construction-support areas will be established along the GKR Project alignment on lands designated as Prime Farmland. These areas will be established only temporarily and will be returned to as close to pre-construction conditions as feasible, or to the conditions agreed upon between the landowner and SCE, following the completion of construction of the GKR Project. Therefore, the establishment and use of construction-support areas will not convert Prime Farmland to nonagricultural use except as directed by the landowner. Such conversion by landowner decree is not part of the GKR Project, as it is the intention of SCE to return all construction-support areas to their prior condition.

### *5.2.4.3 Williamson Act Impacts*

This is addressed in Section 5.2.4.1.2 above.

## 5.2.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for Agricultural and Forestry Resources.




## Legend

| | | | |
|---|---|---|---|
| Segment 1 | | Substation | |
| Segment 2 | | Counties | |
| Segment 3 | | Prime Farmland | |
| Segment 4 | | Farmland of Statewide Importance | |
| Segment 5 | | Unique Farmland | |

N

0 — 10 Miles

NOTE:
(1) Farmland source: *ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/2018/*

# GORMAN-KERN RIVER 66 kV PROJECT

## FARMLANDS

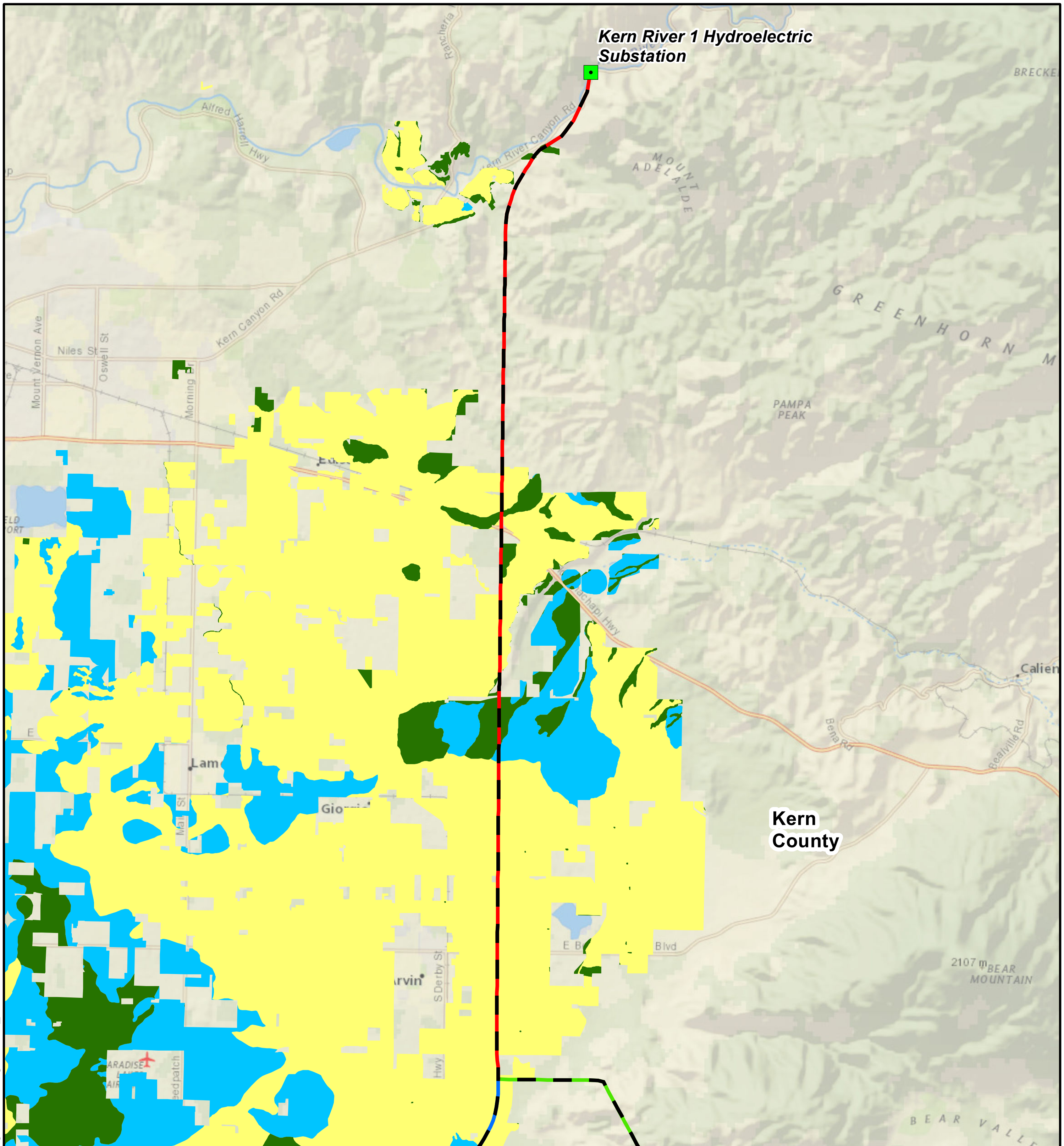
ARCADIS

SOUTHERN CALIFORNIA EDISON — An EDISON INTERNATIONAL Company

FIGURESET

5.2-1.a

T:_ENVS\CE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-2-1_Farmlands.mxd 06/18/2021




## Legend

- Segment 1
- Segment 2
- Segment 4
- Substation
- Counties
- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland

N

0 4
Miles

NOTE:
(1) Farmland source: *ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/2018/*

**GORMAN-KERN RIVER 66 kV PROJECT**

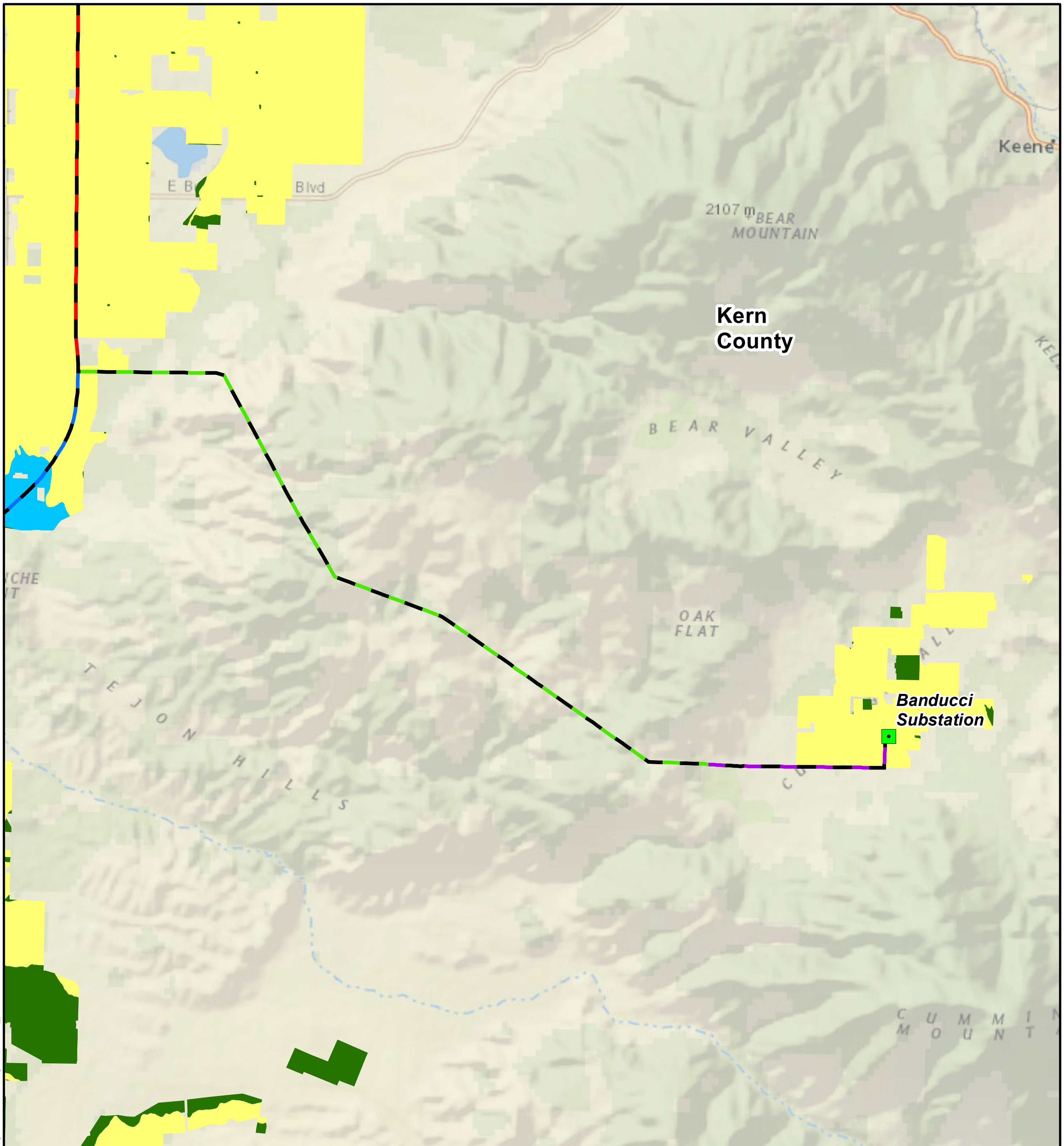
**FARMLANDS**

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURESET
**5.2-1.b**

T:_ENVS\CE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-2-1_Farmlands.mxd 06/18/2021




**Legend**

- Segment 1
- Segment 2
- Segment 4
- Segment 5
- Substation
- Counties
- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland

N

0 3
Miles

NOTE:
(1) Farmland source: *ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/2018/*

**GORMAN-KERN RIVER 66 kV PROJECT**

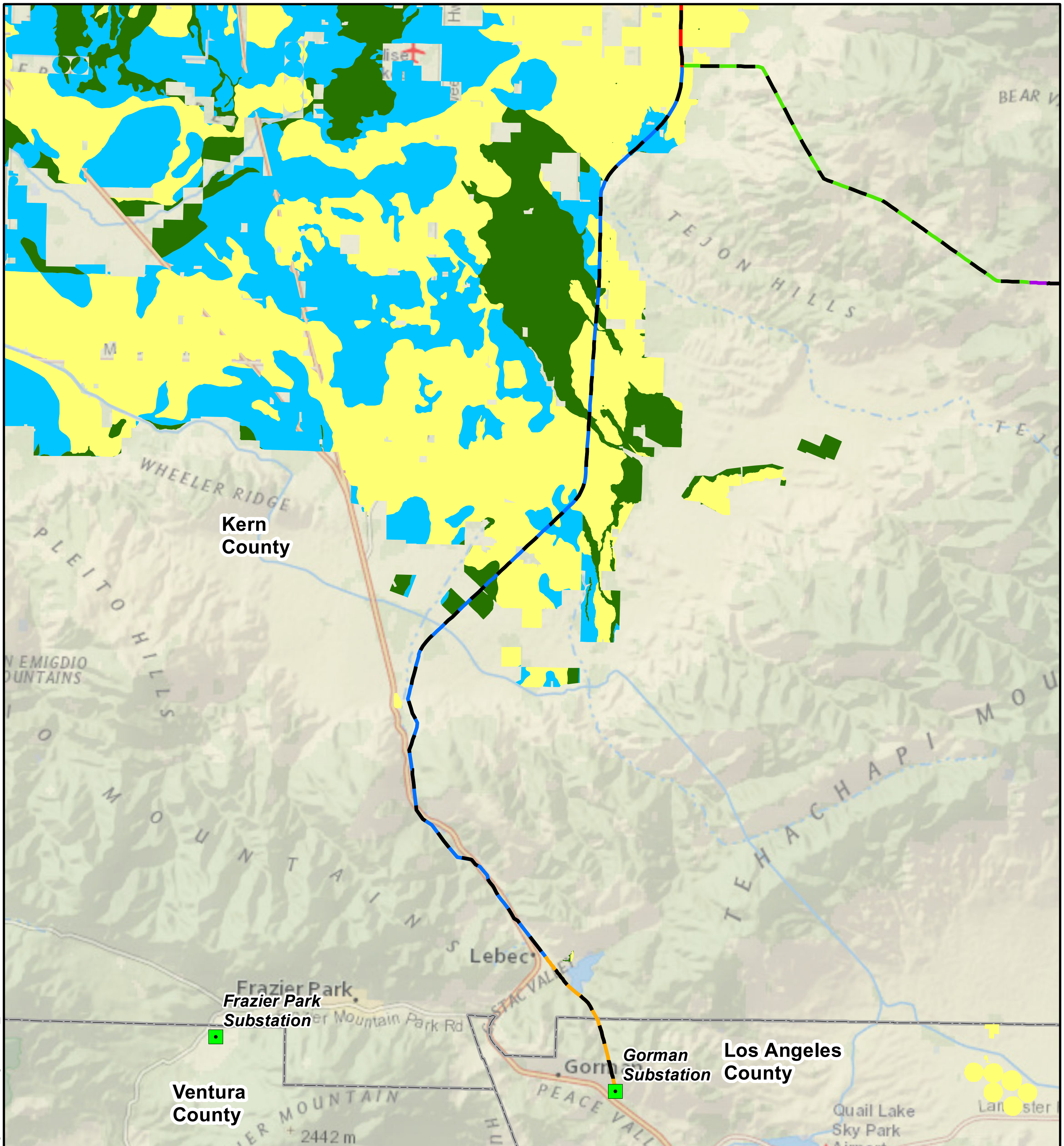
**FARMLANDS**

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURESET **5.2-1.c**

T:_ENVSCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-2-1_Farmlands.mxd 06/18/2021




## Legend

- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Substation
- Counties
- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland

0 4
Miles

N

NOTE:
(1) Farmland source:*ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/2018/*

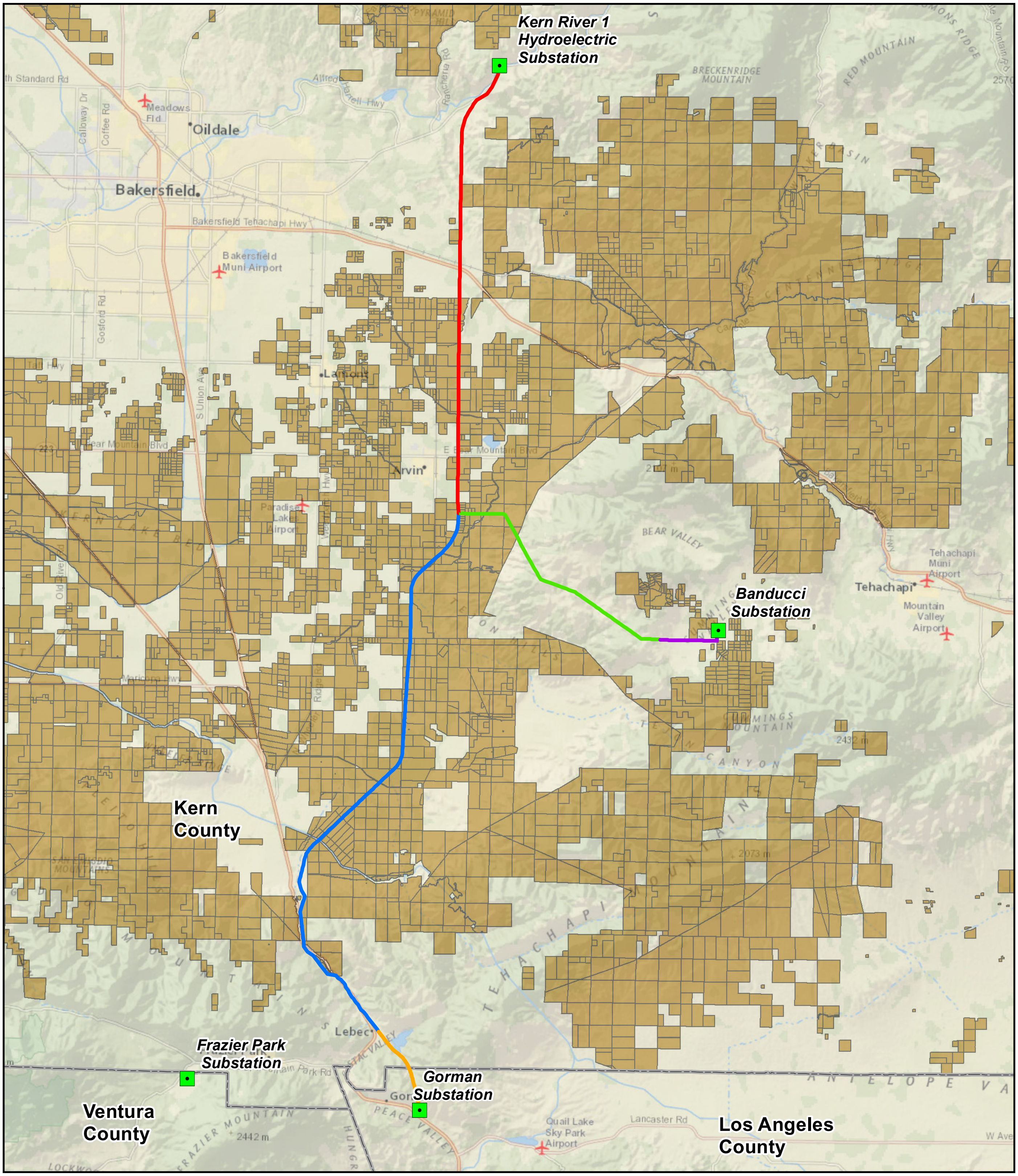
**GORMAN-KERN RIVER 66 kV PROJECT**

**FARMLANDS**

ARCADIS SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL® Company

FIGURESET **5.2-1.d**

T:_ENVS\CE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-2-1_Farmlands.mxd 06/18/2021




# Legend

| | |
|---|---|
| Substation | Counties |
| Segment 1 | Williamson Act Lands |
| Segment 2 | |
| Segment 3 | |
| Segment 4 | |
| Segment 5 | |

Note:
Williamson Act data source:
*http://esps.kerndsa.com/gis/gis-download-data*

N

0 10
Miles

**GORMAN-KERN RIVER 66 kV PROJECT**

**WILLIAMSON ACT LANDS**

ARCADIS SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL® Company

FIGURE **5.2-2**

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-2-2_WilliamsonAct_KERN.mxd 06/14/2021


## Legend

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Counties
- Forest Land
- Timberland/ Timberland Production

N

0 10
Miles

NOTES:
(1) Forest Land data source:
*http://frap.fire.ca.gov/data/frapgisdata-sw-fveg_download*
(2) Timberland data source:
*https://services3.arcgis.com/T4QMspbfLg3qTGWY/arcgis/rest/services/2016_CALFIRE_Timber/FeatureServer*

**GORMAN-KERN RIVER 66 kV PROJECT**

**FOREST LAND, TIMBERLAND, TIMBERLAND PRODUCTION**

ARCADIS
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

**FIGURESET**
**5.2-3.a**

T:_ENVASCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-2-3_ForestLand_KERN.mxd 6/14/2021 7:53:02 PM


Legend

- Substation
- Segment 1
- Segment 2
- Segment 4
- Counties
- Forest Land
- Timberland/ Timberland Production

0 4 Miles

NOTES:
(1) Forest Land data source:
*http://frap.fire.ca.gov/data/frapgisdata-sw-fveg_download*
(2) Timberland data source:
*https://services3.arcgis.com/T4QMspbfLg3qTGWY /arcgis/rest/services/2016_CALFIRE_Timber/FeatureServer*

**GORMAN-KERN RIVER 66 kV PROJECT**

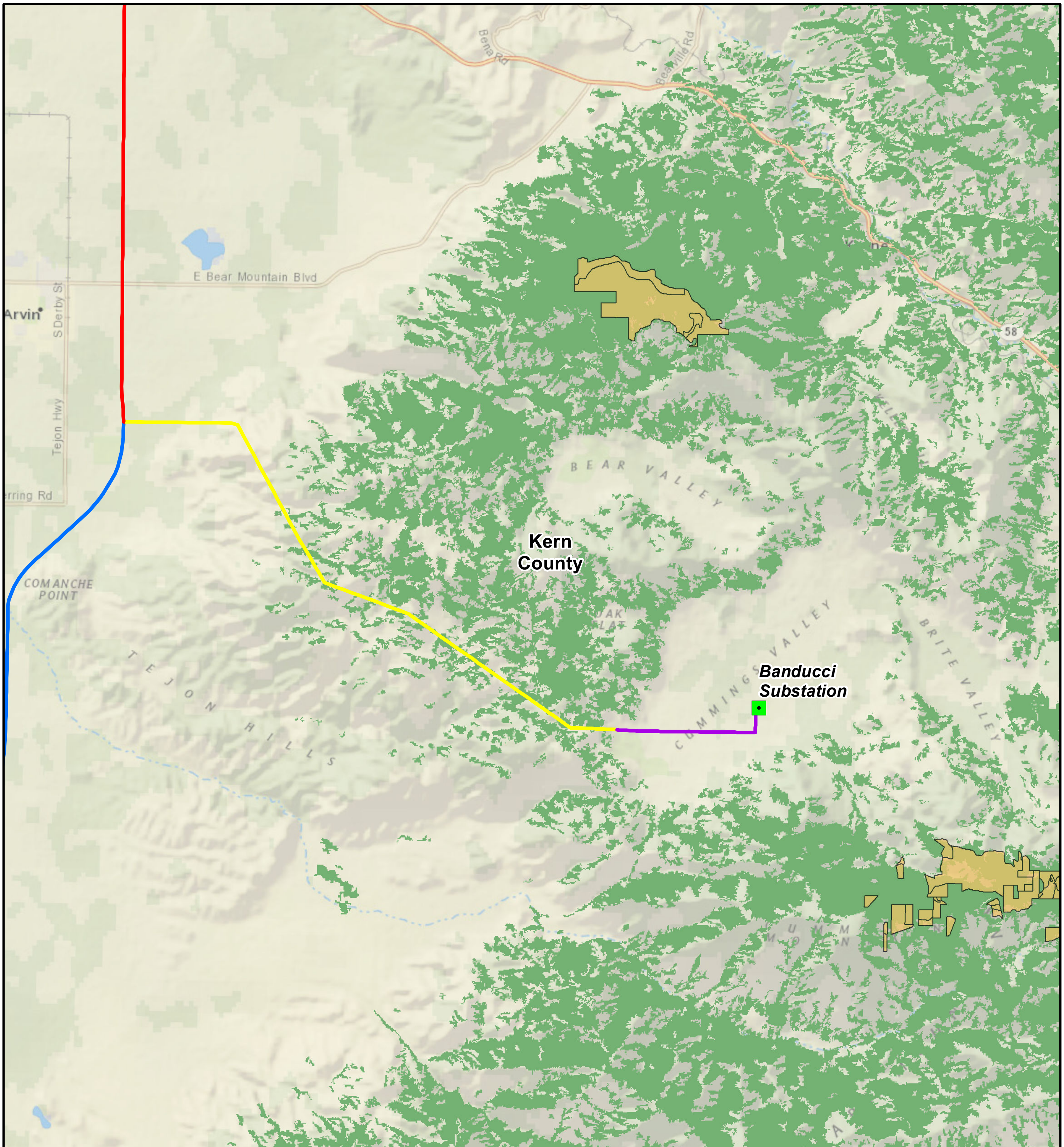
**FOREST LAND, TIMBERLAND, TIMBERLAND PRODUCTION**

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURESET
5.2-3.b

T:_ENVSCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-2-3_ForestLand_KERN.mxd 6/14/2021 7:53:02 PM




## Legend

| | | | |
|---|---|---|---|
| ■ | Substation | ▭ | Counties |
| — | Segment 1 | ■ | Forest Land |
| — | Segment 2 | ■ | Timberland/ Timberland Production |
| — | Segment 4 | | |
| — | Segment 5 | | |

N

0 — 4 Miles

NOTES:
(1) Forest Land data source:
*http://frap.fire.ca.gov/data/frapgisdata-sw-fveg_download*
(2) Timberland data source:
*https://services3.arcgis.com/T4QMspbfLg3qTGWY/arcgis/rest/services/2016_CALFIRE_Timber/FeatureServer*

**GORMAN-KERN RIVER 66 kV PROJECT**

**FOREST LAND, TIMBERLAND, TIMBERLAND PRODUCTION**

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

**FIGURESET**
**5.2-3.c**

T:_ENVSCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-2-3_ForestLand_KERN.mxd 6/14/2021 7:53:02 PM


## Legend

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Counties
- Forest Land
- Timberland/ Timberland Production

N

0 6

Miles

NOTES:
(1) Forest Land data source:
*http://frap.fire.ca.gov/data/frapgisdata-sw-fveg_download*
(2) Timberland data source:
*https://services3.arcgis.com/T4QMspbfLg3qTGWY /arcgis/rest/services/2016_CALFIRE_Timber/FeatureServer*

**GORMAN-KERN RIVER 66 kV PROJECT**

**FOREST LAND, TIMBERLAND, TIMBERLAND PRODUCTION**

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURESET

**5.2-3.d**

T:_ENVSCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-2-3_ForestLand_KERN.mxd 6/14/2021 7:53:02 PM

## 5.3 Air Quality

This Section of the PEA describes the air quality resources in the area of the GKR Project and the potential impacts that may result from construction and operation of the project.

### 5.3.1 Environmental Setting

#### *5.3.1.1 Air Quality Plans*

The GKR Project area is located within three air basins: San Joaquin Valley Air Basin (SJVAB), Mojave Desert Air Basin (MDAB), and South Coast Air Basin (SCAB) which are under the jurisdictions of the SJVAPCD, EKAPCD, and SCAQMD, respectively. These Districts regulate air pollutant emission for all stationary sources in their respective jurisdictions. Approximately 56 miles of the GKR Project alignment is located within the SJVAB and within the SJVAPCD's jurisdiction; approximately 9 miles are located within the MDAB and the EKAPCD's jurisdiction; and approximately 2 miles are located within the SCAB and within SCAQMD's jurisdiction.

It is the responsibility of an air district to ensure that State and Federal ambient air quality standards are achieved and maintained in its geographical jurisdiction. Health-based air quality standards have been established by the State of California (California Ambient Air Quality Standards – CAAQS) and by the Federal government (National Ambient Air Quality Standards – NAAQS) for the following criteria air pollutants: ozone ($O_3$), carbon monoxide (CO), nitrogen dioxide ($NO_2$), particulate matter with a mean diameter of less than 10 microns ($PM_{10}$), particulate matter with a mean diameter of less than 2.5 microns ($PM_{2.5}$), sulfur dioxide ($SO_2$), and lead (Pb). Further, California has additional standards for sulfates, hydrogen sulfide ($H_2S$), vinyl chloride, and visibility reducing particles (VRP). Attainment of the State and Federal ambient air quality standards protect sensitive receptors and the public from criteria pollutants that are known to have adverse human health effects. The applicable air quality plans and rules are addressed in Section 5.3.2, Regulatory Setting.

#### *5.3.1.2 Air Quality*

The USEPA compares ambient air criteria pollutant measurements with NAAQS to assess the status of air quality of regions within the states. Similarly, the California Air Resources Board (CARB) compares air pollutant measurements in California to CAAQS. Based on these comparisons, regions within the states and California are designated as one of the following categories:

- **Attainment.** A region is designated as attainment if monitoring shows ambient concentrations of a specific pollutant are less than or equal to NAAQS or CAAQS. In addition, areas that have been re-designated from nonattainment to attainment are classified as "maintenance areas" for a 10-year period to ensure that the air quality improvements are sustained.
- **Nonattainment.** If the NAAQS or CAAQS is exceeded for a pollutant, then the region is designated as nonattainment for that pollutant.
- **Unclassifiable.** An area is designated as unclassifiable if the ambient air monitoring data are incomplete and do not support a designation of attainment or nonattainment.

The attainment status of each CAAQS and NAAQS pollutant is shown in Table 5.3-1 and the standards are shown in Table 5.3-2.

**Table 5.3-1. Attainment Status for the SCAQMD, SJVAPCD, and EKAPCD**

| Pollutant | California Status | | | National Status | | |
|---|---|---|---|---|---|---|
| | SCAQMD | SJVAPCD | EKAPCD | SCAQMD | SJVAPCD | EKAPCD |
| $O_3$ | Nonattainment | Nonattainment | Nonattainment | Nonattainment | Nonattainment | Nonattainment |
| $PM_{10}$ | Nonattainment | Nonattainment | Nonattainment | Attainment | Attainment | Nonattainment |
| $PM_{2.5}$ | Nonattainment | Nonattainment | Unclassified | Nonattainment | Nonattainment | Unclassified/ Attainment |
| CO | Attainment | Attainment | Unclassified | Unclassified/ Attainment | Unclassified/ Attainment | Unclassified/ Attainment |
| $NO_2$ | Attainment | Attainment | Attainment | Unclassified/ Attainment | Unclassified/ Attainment | Unclassified/ Attainment |
| $SO_2$ | Attainment | Attainment | Attainment | Unclassified/ Attainment | Unclassified/ Attainment | Unclassified/ Attainment |
| Pb | Attainment | Attainment | Attainment | Nonattainment | Unclassified/ Attainment | Unclassified/ Attainment |
| VRP | Unclassified | Unclassified | Unclassified | No Federal Standard | | |
| Sulfates | Attainment | Attainment | Attainment | No Federal Standard | | |
| $H_2S$ | Unclassified | Unclassified | Unclassified | No Federal Standard | | |

Source: https://www.arb.ca.gov/desig/adm/adm.htm

Presently, the ambient air in vicinity of the GKR Project is classified by the CARB as nonattainment for $O_3$, $PM_{10}$ and $PM_{2.5}$. The ambient air in the area is either unclassified or classified as attainment for all other State regulated air pollutants.

**Table 5.3-2. State and Federal Ambient Air Quality Standards**

| Pollutant | Averaging Time | California Standards | National Standards |
|---|---|---|---|
| Ozone ($O_3$) | 1 Hour | 0.09 ppm (180 µg/m3) | — |
| | 8 Hours | 0.070 ppm (137 µg/m$^3$) | 0.070 ppm (137 µg/m$^3$) |
| Respirable Particulate Matter ($PM_{10}$) | 24 Hours | 50 µg/m$^3$ | 150 µg/m$^3$ |
| | AAM | 20 µg/m$^3$ | — |
| Fine Particulate Matter ($PM_{2.5}$) | 24 Hours | — | 35 µg/m$^3$ |
| | AAM | 12 µg/m$^3$ | 12.0 µg/m$^3$ |
| Carbon Monoxide (CO) | 8 Hours | 9.0 ppm (10 mg/m$^3$) | 9 ppm (10 mg/m$^3$) |
| | 1 Hour | 20 ppm (23 mg/m$^3$) | 35 ppm (40 mg/m$^3$) |
| Nitrogen Dioxide ($NO_2$) | AAM | 0.030 ppm (57 µg/m$^3$) | 0.053 ppm (100 µg/m$^3$) |
| | 1 Hour | 0.18 ppm (339 µg/m$^3$) | 0.100 ppm (188 µg/m$^3$) |
| Sulfur Dioxide ($SO_2$) | 24 Hours | 0.04 ppm (105 µg/m$^3$) | 0.14 ppm (365 µg/m$^3$) |
| | 1 Hour | 0.25 ppm (655 µg/m$^3$) | 0.075 ppm (196 µg/m$^3$) |
| Lead | 3-Month Average | — | 0.15 µg/m$^3$ |
| | 30 Day Average | 1.5 µg/m$^3$ | — |

**Table 5.3-2. State and Federal Ambient Air Quality Standards**

| Pollutant | Averaging Time | California Standards | National Standards |
|---|---|---|---|
| Sulfates | 24 Hours | 25 µg/m$^3$ | — |
| Visibility Reducing Particles | 8 Hours | See note[1] | — |
| Hydrogen Sulfide | 1 Hour | 0.03 ppm (42 µg/m$^3$) | — |
| Vinyl Chloride | 24 Hours | 0.01 ppm (26 µg/m$^3$) | — |

Notes:

1 State criterion for nonattainment of visibility-reducing particles is the amount of particles present to produce an extinction coefficient of 0.23 per kilometer when relative humidity is less than 70 percent.

µg/m3 = microgram per cubic meter
mg/m3 = milligram per cubic meter
ppb = parts per billion
ppm = parts per million
Source: CARB (2016)

CARB operates an extensive network of air monitoring stations within California. The monitoring station network provides air quality monitoring data, including real-time meteorological data and ambient pollutant levels, as well as historical data. Table 5.3-3 presents the average ambient pollutant concentrations and the exceedances of state and federal standards that have occurred at the monitoring stations in the San Joaquin Valley Air Basin, Mojave Desert Air Basin, and South Coast Air Basin from 2017 through 2019, the most recent years for which data are available.

**Table 5.3-3. Ambient Air Quality**

| Pollutant | Air Basin | 2017 | 2018 | 2019 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|
| | | # Days > State 1-Hour Std | | | Max 1-Hour Observation | | |
| Ozone | Mojave Desert | 33 | 25 | 12 | 0.152 | 0.126 | 0.119 |
| | San Joaquin | 21 | 27 | 13 | 0.143 | 0.129 | 0.110 |
| | South Coast | 81 | 63 | 73 | 0.158 | 0.142 | 0.137 |
| | | # Days > State 8-Hour Std | | | Max State 8-Hour Average | | |
| Ozone | Mojave Desert | 78 | 88 | 52 | 0.100 | 0.110 | 0.110 |
| | San Joaquin | 87 | 87 | 60 | 0.113 | 0.102 | 0.094 |
| | South Coast | 117 | 113 | 111 | 0.136 | 0.125 | 0.118 |
| | | # Days> National 24-Hour Std | | | Max State 24-Hour Average | | |
| $PM_{2.5}$ | Mojave Desert | 0 | 2.1 | 0 | 27.2 | 40.4 | 34.1 |
| | San Joaquin | 33.8 | 42.3 | 21 | 113.4 | 257.5 | 83.7 |
| | South Coast | 15.4 | 9.1 | 10.1 | 109.6 | 111 | 120.9 |
| | | # Days>State 24-Hour Std | | | Max State 24-Hour Average | | |
| $PM_{10}$ | Mojave Desert | 0 | * | 15 | 85.7 | 103.2 | 240.8 |
| | San Joaquin | 145.5 | 164.4 | 129.7 | 210 | 250.4 | 664.2 |
| | South Coast | 114.6 | 139 | 116.4 | 137.6 | 126 | 182.4 |

* Insufficient data available to determine value
Source: CARB 2020

### *5.3.1.3 Sensitive Receptor Locations*

California Health and Safety Code § 42705.5(a)(5) states that "[s]ensitive receptor locations may include hospitals, schools, and day care centers, and such other locations as the air district board or California Air Resources Board may determine." This document utilizes the SCAQMD definition of sensitive receptor:

> SENSITIVE RECEPTOR means any residence including private homes, condominiums, apartments, and living quarters, schools as defined under paragraph (b)(57), preschools, daycare centers and health facilities such as hospitals or retirement and nursing homes. A sensitive receptor includes long term care hospitals, hospices, prisons, and dormitories or similar live-in housing.

Sensitive receptors in the vicinity of the GKR Project are shown in Figureset 5.13-1; Section 5.13, Noise provides more detailed descriptions of the locations of residential areas and other sensitive receptors in the vicinity of the GKR Project.

## 5.3.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the GKR Project.

### *5.3.2.1 Regulatory Setting*

#### 5.3.2.1.1 Federal

The 1970 Federal Clean Air Act (CAA) established ambient air quality standards (AAQS) for six major pollutants—$O_3$, particle pollution ($PM_{10}$, $PM_{2.5}$), CO, $NO_2$, $SO_2$, and lead. These six air pollutants are known to have adverse impacts on human health and the environment. To protect human health and the environment, the USEPA set primary and secondary maximum ambient thresholds for criteria pollutants. The primary thresholds were set to protect human health - particularly for children and the elderly, as well as for individuals who suffer from chronic lung conditions (e.g., asthma and emphysema). The secondary standards were set to protect the natural environment and prevent further deterioration of animals, crops, vegetation, and buildings. The NAAQS is comprised of the combined primary and secondary standards set by the U.S. EPA. The 1977 CAA Amendments required each state to develop and maintain a State Implementation Plan (SIP) for each criteria pollutant that exceeds the NAAQS for that pollutant. The SIP serves as a tool to reduce pollutants that are known to cause impacts if they exceed ambient thresholds and to achieve compliance with the NAAQS. In 1990, the CAA was amended to strengthen regulation of both stationary and mobile emission sources for the criteria pollutants. In July 1997, the USEPA developed new health-based NAAQS for $O_3$ and $PM_{10}$. However, these standards were not fully implemented until 2001, after the resolution of several lawsuits. The new federal $O_3$ standard of 0.080 parts per million (ppm), established in 1997, was based on a longer averaging period (8 hours versus 1 hour), recognizing that prolonged exposure to $O_3$ is more damaging. In March 2008, the USEPA further lowered the 8-hour $O_3$ standard from 0.080 ppm to 0.075 ppm, and in 2015 the standard was lowered to 0.07 ppm. The new federal PM standard is based on finer particles (2.5 microns and smaller versus 10 microns and smaller), recognizing that finer particles may have a higher residence time in the lungs and contribute to greater respiratory illness. In February 2007, the NAAQS for $NO_2$ was amended to lower the existing 1-hour standard of 0.25 ppm to 0.18 ppm, which is not to be exceeded; and established a new annual standard of 0.030 ppm, which is also not to be exceeded. Table 5.3-2 contains a list of the NAAQS.

#### 5.3.2.1.2 State

The California Clean Air Act (CCAA) requires air districts to develop and implement strategies to attain CAAQS. For some pollutants, the California standards are more stringent than the national standards. Regional air quality management districts are mandated to prepare an air quality plan specifying how federal and state standards would be met. The CAAQS are listed in Table 5.3-2. The CARB enforces the CAAQS and works with the state's Office of Environmental Health Hazard Assessment in identifying toxic air contaminants (TACs) and enforcing rules related to TACs, including the Air Toxic Hot Spots Information and Assessment Act of 1987 (California Health and Safety Code Section 44300, et seq.). Enacted to identify TAC hot spots where emissions from specific sources may expose individuals to an elevated risk of adverse health effects, this act requires that businesses or other establishments identified as significant sources of toxic emissions provide the affected population with information about health risks posed by the emissions.

CARB also regulates mobile emission sources in California (e.g., construction equipment, trucks, and automobiles) and oversees the air districts. Relevant programs related to the oversight of mobile source emissions include the Off-Road and On-Road Mobile Sources Emission Reduction Programs, the Portable Equipment Registration Program (PERP), and the Airborne Toxic Control Measure for Diesel Particulate Matter (DPM) from Portable Engines. The Mobile Sources Emission Reduction programs are aimed at reductions of $PM_{10}$, CO, $NO_x$, and VOCs. CARB has also adopted specific control measures for the reduction of DPM from off-road, in use diesel vehicles (rated 25 horsepower and higher), such as backhoes, bulldozers, and earthmovers used in construction projects. Additional DPM control measures are also in place for heavy-duty, on-road diesel trucks operated by public utilities and municipalities. The PERP and Airborne Toxic Control Measure for DPM from Portable Engines provide for statewide registration and control of DPM from portable engines rated 50 horsepower and higher.

#### 5.3.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the GKR Project. Pursuant to GO 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the GKR Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

The applicable air districts are responsible for regulating emissions from stationary sources in their air districts. The air districts are also responsible for developing, updating, and implementing the Air Quality Management Plans (AQMPs) for their air basins. An AQMP is prepared and implemented by an air pollution district for a county or region designated as being in "nonattainment" of the national and/or California ambient air quality standards.

The following rules were established by the air districts to regulate air quality and are applicable to the project.

##### *5.3.2.1.3.1 South Coast Air Quality Management District*

In addition to supporting CARB and EPA air quality programs, the SCAQMD also develops plans and implements control measures for regulated pollutants in the SCAB, primarily affecting stationary sources such as factories and plants. The SCAQMD is required to update plans for improving air quality in the SCAB as needed or every three years. The 2016 Air Quality Management Plan (AQMP) (SCAQMD, 2017) is the latest version designed to satisfy requirements of both Federal and State clean air laws. The plan outlines policies and practices intended to achieve attainment levels for criteria pollutants and avoid future levels that exceed applicable standards.

SCAQMD Rule 403 requires the implementation of best available dust control measures during construction activities capable of generating fugitive dust, which may include the following:

- Stabilizing disturbed areas with water or a chemical stabilizer, or by covering the areas with a tarp or other suitable cover
- Covering materials transported off site or stabilizing the transported materials while maintaining at least 6 inches of freeboard space from the top of the container
- Limiting traffic speeds on unpaved roads to 15 miles per hour (mph) These actions are required for all projects within the SCAB that are capable of generating fugitive dust.

*5.3.2.1.3.2 Eastern Kern Air Pollution Control District*

The EKAPCD seeks to attain and maintain NAAQS and CAAQS and to ensure air pollutants do not pose a nuisance or significant health threat. The EKAPCD has adopted two plans to address EKAPCD's nonattainment status for ozone: Reasonably Available Control Technology (RACT) State Implementation Plan (SIP) (2020) and Ozone Attainment Plan (2017).

EKAPCD Rule 401 limits discharge into the atmosphere visible emissions and Rule 402 prevents, reduces, and mitigates fugitive dust emissions using reasonable available control measures. Rule 419 prevents public nuisances.

*5.3.2.1.3.3 San Joaquin Valley Air Pollution Control District*

The SJVAPCD implements air quality programs required by state and federal mandates, enforces rules and regulations based on air pollution laws, and educates businesses and residents about their roles in protecting air quality. The SJVAPCD is responsible for managing and permitting existing, new, and modified sources of air emissions within its boundaries, and has established rules and regulations that would apply to the proposed project to ensure compliance with local, state, and federal air quality regulations.

SJVAPCD Regulation VIII contains rules developed pursuant to EPA guidance for serious $PM_{10}$ nonattainment areas. Rules included under this regulation aim to limit fugitive dust emissions from construction, demolition, excavation, extraction, and other earthmoving activities; bulk material handling, storage, and transport; carryout and track-out; and driving in paved and unpaved vehicle and equipment traffic areas.

#### *5.3.2.2 Air Permits*

SCE has not identified the need to apply for or receive any air quality-related discretionary permits from the EKAPCD, SCAQMD, or SJVAPCD; SCE will comply with applicable rules and will develop and implement required plans.

### 5.3.3 Impact Questions

#### *5.3.3.1 Impact Questions*

The significant criteria for assessing the impacts to air quality come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Conflict with or obstruct implementation of the applicable air quality plan
- Result in a cumulatively considerable net increase of any criteria pollutant for which the GKR Project region is nonattainment under an applicable federal or state ambient air quality standard

- Expose sensitive receptors to substantial pollutant concentrations
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people

#### 5.3.3.1.1 Thresholds for Construction Emissions

Section 15002 of the CEQA Guidelines defines a significant effect on the environment as "a substantial adverse change in the physical condition which exists in the area affected by the proposed project." The impact of a project to air quality is determined by examining the types and levels of emissions generated by the GKR Project and its impact on factors that affect air quality. As such, projects should be evaluated in terms of identified air pollution thresholds.

##### *5.3.3.1.1.1 Eastern Kern Air Pollution Control District*

The EKAPCD Guidelines for Implementation of CEQA (EKAPCD 2012) provides air quality significance thresholds for operation of a project.  These thresholds values were used in the absence of construction significance thresholds.

A project would have a significant air quality impact on the environment, if it would, within the EKAPCD jurisdiction:

- Emit criteria air pollutants levels exceeding the trigger levels in EKAPCD Rule 210.1 of: 15 tons per year of PM10; 27 tons per year of $SO_x$; or 25 tons per year of VOC or $NO_x$;
- Emit more than 137 pounds per day of $NO_x$ or VOC from motor vehicle trips (indirect sources only);
- Cause or contribute to an exceedance of any California or National Ambient Air Quality Standard;
- Exceed the District health risk public notification thresholds; or
- Be inconsistent with adopted federal and state Air Quality Attainment Plans.

##### *5.3.3.1.1.2 San Joaquin Valley Air Pollution Control District*

The SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts (SJVAPCD 2015) provides air quality significance for both construction and operational emissions. For construction related emissions, a project would have a significant air quality impact on the environment, if it would, within the SJVAPCD jurisdiction:

- Emit criteria pollutant levels in excess of
    - CO 100 tons per year (tpy)
    - NOx 10 tpy
    - ROG 10 tpy
    - SOx 27 tpy
    - PM10 15 tpy
    - PM2.5 15 tpy

##### *5.3.3.1.1.3 South Coast Air Quality Management District*

The SCAQMD provides air quality significance in its SCAQMD Air Quality Significance Thresholds (2011) for both construction and operational emissions. For construction related emissions, a project would have a significant air quality impact on the environment, if it would, within the SCAQMD jurisdiction:

- Emit criteria pollutant levels in excess of
  - $NO_x$ 100 lbs/day
  - VOC 75 lbs/day
  - $PM_{10}$ 150 lbs/day
  - $PM_{2.5}$ 55 lbs/day
  - $SO_x$ 150 lbs/day
  - CO 550 lbs/day
  - Lead 3 lbs/day
- Creates an odor nuisance pursuant to South Coast AQMD Rule 402
- In addition, the SCAQMD has identified Localized Significance thresholds that are dependent on ambient air concentrations, the size of the construction area and the distance to the nearest sensitive receptor (SCAQMD 2009). The nearest sensitive receptor to the GKR Project within the SCAB is approximately 200 feet to the west. Therefore, the Localized Significance Thresholds for a 5-acre site at a distance of 50 meters were used and listed below:
  - $NO_x$ 236 lbs/day
  - CO 2,095 lbs/day
  - $PM_{10}$ 38 lbs/day
  - $PM_{2.5}$ 8 lbs/day

### *5.3.3.2 Additional CEQA Impact Questions*

There are no CPUC-identified additional CEQA impact questions.

## 5.3.4 Impact Analysis

### *5.3.4.1 Impact Analysis*

#### 5.3.4.1.1 Would the project conflict with or obstruct implementation of the applicable air quality plan?

##### *5.3.4.1.1.1 Construction*

**No Impact.** The EKAPCD, SCAQMD, and SJVAPCD are the agencies responsible for managing local air quality and administering California and federal air pollution control programs ensuring attainment and maintenance of the ambient air quality standards. To this end, the districts have each established an air quality management plan (AQMP). Generally, a project may be inconsistent with an AQMP or applicable attainment plan if it could cause population and/or employment growth or growth in vehicle-miles traveled in excess of the growth forecasts included in an applicable AQMP or attainment plan.

Because construction of the GKR Project would not result in population growth, the GKR Project would not conflict with the growth projections used in the development of the applicable AQMPs. Please see Section 5.14, Population and Housing, for a discussion of economic and population growth.

Furthermore, the emissions associated with GKR Project construction would be temporary and would represent a small fraction of the regional emission inventories included in the applicable AQMPs. Construction of the project would be performed in compliance with applicable air district rules and regulations; this would ensure that activities are consistent with air district efforts to achieve attainment and maintenance of the standards. The GKR Project-related emissions occurring in compliance with these rules and regulations would not conflict with or obstruct implementation of the applicable air quality plan.

Because the GKR Project's construction emissions are not expected to substantially contribute to regional emissions and would not conflict with the growth projections in the applicable AQMPs, and because construction of the project would be performed in compliance with applicable air district rules and regulations, the GKR Project would not conflict with or obstruct implementation of the applicable AQMPs, and there would be no impact.

###### *5.3.4.1.1.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the project, and therefore no impacts would be realized under this criterion during operations and maintenance.

#### 5.3.4.1.2 Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the GKR Project region is nonattainment under an applicable federal or state ambient air quality standard?

###### *5.3.4.1.2.1 Construction*

**Less than Significant Impact with Mitigation.** Emissions during the construction phase would include criteria air pollutants that could contribute to existing or projected violations of the ambient air quality standards for ozone, $PM_{10}$, and $PM_{2.5}$. Reconstruction of the existing 66 kV subtransmission line elements would result in air pollutant emissions from construction equipment and material handling at the various work areas and from off-site motor vehicle trips carrying workers and materials, and helicopter use. Motor vehicles, helicopters, off-road equipment, and other construction equipment would directly emit criteria air pollutants and toxic air contaminants. The equipment and workforce are itemized and detailed in Table 3.6-1. Table 5.3-4 and Table 5.3-5 summarize the estimated total annual construction emissions. Annual emissions in each air district with annual construction significance thresholds (SJVAPCD and EKAPCD) were estimated using the total project annual emissions and the fraction of the line mileage in the air district as shown in Table 5.3-6 and Table 5.3-7. Table 5.3-8 and Table 5.3-9 summarizes the daily emissions for construction in the SCAQMD jurisdiction assuming only one crew would be active in the air district on any given day.

**Table 5.3-4. Estimated Annual Construction Emissions, Controlled**

| Construction Year | VOC | $NO_x$ | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ | CO |
|---|---|---|---|---|---|---|
| 2024 (tpy) | 0.2 | 2 | 0.007 | 4 | 0.5 | 1 |
| 2025 (tpy) | 0.9 | 7 | 0.032 | 9 | 1.1 | 6 |
| 2026 (tpy) | 0.881 | 5.07 | 0.021 | 7.0 | 0.89 | 5.41 |

Abbreviations:
tpy = tons per year

**Table 5.3-5. Estimated Annual Construction Emissions, Uncontrolled**

| Construction Year | VOC | $NO_x$ | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ | CO |
|---|---|---|---|---|---|---|
| 2024 (tpy) | 0.2 | 2 | 0.007 | 60 | 6.1 | 1 |
| 2025 (tpy) | 0.9 | 7 | 0.032 | 127 | 13.0 | 6 |
| 2026 (tpy) | 0.881 | 5.07 | 0.021 | 103.2 | 10.49 | 5.41 |

Abbreviations:
tpy = tons per year

**Table 5.3-6. Estimated District Annual Construction Emissions, Controlled**

| | VOC | $NO_x$ | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ | CO |
|---|---|---|---|---|---|---|
| **SJVAPCD** | | | | | | |
| Annual Emissions (tpy) | 0.7 | 6.0 | 0.027 | 7.2 | 0.9 | 5.2 |
| Significance Threshold (tpy) | 10 | 10 | 27 | 15 | 15 | 100 |
| **Exceedance?** | **No** | **No** | **No** | **No** | **No** | **No** |
| **EKAPCD** | | | | | | |
| Annual Emissions (tpy) | 0.1 | 1.0 | 0.004 | 1.2 | 0.1 | 0.8 |
| Significance Threshold (tpy) | 25 | 25 | 27 | 15 | None | None |
| **Exceedance?** | **No** | **No** | **No** | **No** | **No** | **No** |

Abbreviations:
tpy = tons per year

**Table 5.3-7. Estimated District Annual Construction Emissions, Uncontrolled**

| District | VOC | $NO_x$ | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ | CO |
|---|---|---|---|---|---|---|
| **SJVAPCD** | | | | | | |
| Annual Emissions (tpy) | 0.7 | 6.0 | 0.027 | 106.6 | 10.8 | 5.2 |
| **Significance Threshold (tpy)** | 10 | 10 | 27 | 15 | 15 | 100 |
| **Exceedance?** | **No** | **No** | **No** | **Yes** | **No** | **No** |
| **EKAPCD** | | | | | | |
| Annual Emissions (tpy) | 0.1 | 1.0 | 0.004 | 17.1 | 1.7 | 0.8 |
| **Significance Threshold (tpy)** | 25 | 25 | 27 | 15 | None | None |
| **Exceedance?** | **No** | **No** | **No** | **Yes** | **No** | **No** |

Abbreviations:
tpy = tons per year

**Table 5.3-8. Estimated Daily Construction Emissions, Controlled**

| Construction Year | VOC | $NO_x$ | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ | CO |
|---|---|---|---|---|---|---|
| 2024 (ppd) | 6 | 84 | 0.4 | 54 | 9 | 25 |
| 2025 (ppd) | 8 | 56 | 0.3 | 26 | 4 | 34 |
| 2026 (ppd) | 16 | 46 | 0.2 | 28 | 4 | 57 |
| Maximum | **16** | **84** | **0.4** | **54** | **9** | **57** |
| Significance Threshold (ppd) | 75 | 100 | 550 | 150 | 55 | 550 |
| **Exceedance?** | **No** | **No** | **No** | **No** | **No** | **No** |

Abbreviations:
ppd = pounds per day

**Table 5.3-9. Estimated Daily Construction Emissions, Uncontrolled**

| Construction Year | VOC | $NO_x$ | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ | CO |
|---|---|---|---|---|---|---|
| 2024 (ppd) | 6 | 84 | 0.4 | 304 | 34 | 25 |
| 2025 (ppd) | 8 | 56 | 0.3 | 134 | 15 | 34 |
| 2026 (ppd) | 16 | 46 | 0.2 | 143 | 16 | 57 |
| Maximum | **16** | **84** | **0.4** | **304** | **34** | **57** |
| Significance Threshold (ppd) | 75 | 100 | 550 | 150 | 55 | 550 |
| **Exceedance?** | **No** | **No** | **No** | **Yes** | **No** | **No** |

Abbreviations:
ppd = pounds per day

Construction-related emissions would be spread over a development schedule of 24 months over two years (September 2024 – September 2026). Based on the construction activity forecast, none of the evaluated pollutants would be emitted at levels above the threshold for the construction duration of the GKR Project.

As shown in Tables 5.3-4 through 5.3-9, with implementation of APM AIR-1 and compliance with district fugitive dust rules, controlled construction emissions would not exceed the significance threshold for any criteria pollutant. Therefore, construction of the GKR Project could not result in a cumulatively considerable net increase. As a result, impacts would be less than significant after mitigation.

*5.3.4.1.2.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the project, and therefore no impacts would be realized under this criterion during operations and maintenance.

#### 5.3.4.1.3 Would the project expose sensitive receptors to substantial pollutant concentrations?

*5.3.4.1.3.1 Construction*

**Less than Significant Impact.** Sensitive receptors in the vicinity of the GKR Project alignment could be exposed to increases in pollutants as a result of the fugitive dust released during excavation activities, as a result of vehicle travel on unpaved roads, and as a result of the use of internal combustion engines on construction equipment. Pollutant emissions would be distributed over the construction period and across the GKR Project alignment, and thus would not be concentrated in any one area. Further, activities at any given construction work area would last a matter of days, and where multiple activities are scheduled for a given construction work area, activities would generally not overlap or be performed consecutively. As a result, the actual emissions that would be created at a single site, and thus at a single sensitive receptor, would be dramatically lower than the overall project emissions.

To determine the impacts from pollutants on local receptors in the SCAB, SCAQMD has developed Localized Significance Thresholds. As presented in Table 5.3-10, construction of the GKR Project would not expose surrounding sensitive receptors to air pollutants that would exceed the Localized Significance Thresholds during construction of GKR Project within the South Coast Air Basin.

**Table 5.3-10. Estimated Localized Construction Emissions**

| **Construction Year** | **$NO_x$** | **$PM_{10}$** | **$PM_{2.5}$** | **CO** |
|---|---|---|---|---|
| 2024 | 24 | 3 | 1 | 19 |
| 2025 | 24 | 2 | 1 | 25 |
| 2026 | 39 | 2 | 1 | 39 |
| Maximum | 39 | 3 | 1 | 39 |
| Significance Threshold (ppd) | 236 | 38 | 8 | 2,095 |
| **Exceedance?** | **No** | **No** | **No** | **No** |

Abbreviations:
ppd = pounds per day

Therefore, because of the temporary and transient temporal and geographic nature of emissions, and that the GKR Project's construction emissions would not exceed the SCAQMD Localized Significance Thresholds, impacts would be less than significant.

*5.3.4.1.3.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the project, and therefore no impacts would be realized under this criterion during operations and maintenance.

#### 5.3.4.1.4 Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

*5.3.4.1.4.1 Construction*

**Less than Significant Impact.** Potential odor sources associated with construction of the GKR Project include equipment exhaust. These emissions would be short-term, distributed throughout the alignment, intermittent in nature, would disperse quickly, and would cease upon completion of construction. Because odors would be temporary and would disperse rapidly with distance from the source, and because the majority of construction activities would occur in unoccupied, open space areas, construction-generated odors would not result in the frequent or long-term exposure of a substantial number of people to objectionable odorous emissions. Therefore, impacts would be less than significant.

*5.3.4.1.4.2 Operations*

**Less than Significant Impact.** Potential odor sources associated with O&M activities include equipment exhaust. These emissions would be short-term, limited to the location of the O&M activity and intermittent in nature, would disperse quickly, and would cease upon completion of the O&M activity at a given location. Because odors would be temporary and would disperse rapidly with distance from the source, and because the majority of O&M activities would occur in unoccupied, open space areas, O&M-generated odors would not result in the frequent or long-term exposure of a substantial number of people to objectionable odorous emissions. Therefore, impacts would be less than significant.

#### *5.3.4.2 Air Quality Emissions Modeling*

Emissions from ground construction activities were estimated using CalEEMod v2016.3.2. The Model uses widely accepted models for emission estimates and default data from sources such as USEPA AP-42 emission factors, CARB vehicle emission models, and California Energy Commission and other agency studies (California Air Pollution Control Officers Association [CAPCOA] 2013). Helicopter emissions were estimated based on the Swiss Federal Office of Civil Aviation (FOCA) Guidance on the Determination of Helicopter Emissions (FOCA 2015). Emissions modeling results are presented in Appendix B; model input and output data sheets in Microsoft Excel format are provided to the CPUC under separate cover.

#### *5.3.4.3 Air Quality Emissions Summary*

A table summarizing the air quality emissions for the project and applicable thresholds for each applicable attainment area in presented in Section 5.3.4.1 above. Section 5.3.4.1 also includes a summary of uncontrolled emissions; because no exceedances are modeled, no APMs are proposed, and thus there is no summary of controlled emissions. The assumptions that were applied in the controlled emissions estimates are also provided.

#### *5.3.4.4 Health Risk Assessment*

Review of Office of Environmental Health Hazard Assessment guidance (Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments, February 2015) indicates a Health Risk Assessment is not required for the GKR Project because no new stationary source of air pollutants is included in the GKR Project.

### 5.3.5 CPUC Draft Environmental Measures

SCE will implement, at the direction of the CPUC, the following CPUC-identified Draft Environmental Measure during construction of the GKR Project:

**Dust Control During Construction**

The Applicant shall implement measures to control fugitive dust in compliance with all local air district(s) standards. Dust control measures shall include the following at a minimum:

- All exposed surfaces with the potential of dust-generating shall be watered or covered with coarse rock to reduce the potential for airborne dust from leaving the site.
- The simultaneous occurrence of more than two ground disturbing construction phases on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
- Cover all haul trucks entering/leaving the site and trim their loads as necessary.
- Use wet power vacuum street sweepers to sweep all paved access road, parking areas, staging areas, and public roads adjacent to project sites on a daily basis (at minimum) during construction. The use of dry power sweeping is prohibited.

- All trucks and equipment, including their tires, shall be washed off prior to leaving project sites.
- Apply gravel or non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at project sites.
- Water and/or cover soil stockpiles daily.
- Vegetative ground cover shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- All vehicle speeds shall be limited to fifteen (15) miles per hour or less on unpaved areas.
- Implement dust monitoring in compliance with the standards of the local air district.
- Halt construction during any periods when wind speeds are in excess of 50 mph.

## 5.4 Biological Resources

This Section of the PEA describes the biological resources found along the GKR Project alignment, as well as an assessment of impacts that have the potential to occur during construction and operation of the project.

### 5.4.1 Environmental Setting

This section provides a detailed description of the biological resources found along the GKR Project. The project occurs at the confluence of several mountain ranges and different biogeographic areas. The project contains seven distinct segments as described in Chapter 3; discussions in this section are divided by project segment where appropriate.

#### *5.4.1.1 Biological Resources Technical Report*

The *TLRR Sensitive Species and Habitat Report: Kern River 66 kV Subtransmission Line* (Arcadis 2019a) and the *Wetlands and Other Waters Jurisdictional Delineation Report: Kern River 66 kV Subtransmission Line* (Arcadis 2019b) prepared for the GKR Project summarize the methodologies used during the biological resources and jurisdictional delineation surveys performed along the GKR Project alignment. These reports discuss observed natural communities, observed special-status species, species with the potential to occur along the GKR Project alignment, along with jurisdictional features. These reports are provided in Appendix C. The reports in Appendix C address a larger area than included under the GKR Project, while the analysis included in this Section of the PEA reflects the current GKR Project.

Table 5.4-1 presents the dates on which surveys along the GKR Project alignment were conducted.

**Table 5.4-1. Biological Surveys Conducted within the GKR Project Alignment**

| Type of Survey | Year | Date(s) | Segments |
|---|---|---|---|
| Reference Site Plant Surveys | 2017 | April 24–27 | 1–5 |
| Burrowing Owl Surveys | 2017 | May 8–12 | 1–5 |
| Special-status Plant Surveys | 2017 | May 15–19 | 1–5 |
| Special-status Wildlife Surveys | 2017 | May 15–19 | 1–5 |
| Vegetation Mapping and Classification | 2017 | May 15–19 | 1–5 |
| Special-status Plant Surveys | 2018 | April 29–May 2 | 1–5 |
| Special-status Wildlife Surveys | 2018 | April 29–May 2 | 1–5 |
| Vegetation Mapping and Classification | 2018 | April 29–May 2 | 1–5 |
| Jurisdictional Delineation | 2017 | March 13–31 | 1–5 |

#### *5.4.1.2 Survey Area (Local Setting)*

The field survey area was a 150-foot-wide corridor spanning 75 feet on each side of the centerline for the entire approximately 65.3-mile GKR Project alignment and a 100-foot radius area around existing poles. Details on the survey methodology and environmental characteristics are provided in Appendix C.

#### *5.4.1.3 Vegetation Communities and Land Cover*

Thirty-one alliances and 45 associations were identified during the 2017-2018 surveys of the GKR Project alignment; the identified alliances include nine woodland alliances, twelve shrubland alliances, and ten herbaceous alliances. A summary of identified vegetation alliances is presented in Table 5.4-2. Seven additional land use types were also mapped that address agricultural and landscape plantings, open water, unvegetated wash or river bottom, developed areas, and disturbed areas. Figureset 5.4-1 shows the vegetation alliances and associations along the GKR Project alignment.

**Table 5.4-2. Natural Communities and Land Cover Types Mapped along the GKR Project Alignment**

| Vegetation Alliance | Vegetation Association | Area Mapped on GKR Project Alignment (acres) | Area Mapped within Anticipated Work Areas with Temporary Impacts (acres)[1] | Area Mapped within Anticipated Work Areas with Permanent Impacts (acres)[1] | California State Rarity Ranking |
|---|---|---|---|---|---|
| ***Woodland and Forest Vegetation*** | | | | | |
| Valley Oak Woodland | *Quercus lobata – Salix lasiolepis* Association | 0.2 | 0.2 | 0.0 | S2? |
| | *Quercus lobata* / grass Association | 14.8 | 8.9 | 0.5 | S3 |
| | *Quercus lobata – Salix laevigata* Provisional Association | 0.4 | 0.1 | 0.0 | S3 |
| Fremont Cottonwood Forest | *Populus fremontii – Salix lasiolepis* Association | 2.6 | 1.9 | 0.0 | S3.2 |
| | *Populus fremontii – Salix (laevigata, lasiolepis, lucida* subsp. *lasiandra*) Association | 1.2 | 0.9 | 0.0 | S3.2 |
| Shining Willow Groves | *Salix lucida* subsp. *lasiandra* Association | 2.5 | 1.2 | 0.01 | S3.2 |
| | *Salix lucida* subsp. *lasiandra / Urtica urens – Urtica dioica* Association | 0.1 | 0.1 | 0.0 | S3.2 |
| California Buckeye Groves | *Aesculus californica* Association | 5.5 | 1.2 | 0.1 | S3 |
| California Sycamore Woodland | *Platanus racemosa – Salix laevigata / Salix lasiolepis* Association | 4.4 | 0.5 | 0.0 | S3 |
| Goodding's Willow - Red Willow Riparian Woodlands | *Salix laevigata / Salix lasiolepis* Association | 0.9 | 0.8 | 0.1 | S3 |
| | *Salix laevigata* Association | 3.9 | 1.4 | 0.04 | S3 |
| Blue Oak Woodland | *Quercus douglasii – Aesculus californica / Grass* Association | 6.0 | 2.1 | 0.0 | S4 |
| | *Quercus douglasii – Pinus sabiniana* Association | 33.9 | 11.7 | 0.9 | S4 |
| | *Quercus douglasii – Quercus lobata* Association | 10.0 | 6.1 | 0.4 | Yes[2] |

**Table 5.4-2. Natural Communities and Land Cover Types Mapped along the GKR Project Alignment**

| Vegetation Alliance | Vegetation Association | Area Mapped on GKR Project Alignment (acres) | Area Mapped within Anticipated Work Areas with Temporary Impacts (acres)[1] | Area Mapped within Anticipated Work Areas with Permanent Impacts (acres)[1] | California State Rarity Ranking |
|---|---|---|---|---|---|
| | *Quercus douglasii – Quercus wislizeni – Pinus sabiniana* Association | 6.2 | 1.5 | 0.2 | S4 |
| | *Quercus douglasii / Bromus* spp. *– Daucus pusillus* Association | 56.3 | 14.3 | 1.5 | S4 |
| | *Quercus douglasii / Eriogonum fasciculatum /* Herbaceous Association | 2.5 | 1.2 | 0.0 | S4 |
| Mixed Oak Forest | *Mixed Oak – Aesculus californica / Grass* Association | 18.9 | 5.5 | 0.3 | S4 |
| Canyon Live Oak Forest | *Quercus chrysolepis* Association | 2.3 | 0.6 | 0.05 | S5 |
| ***Total Acres Woodland Vegetation*** | | ***172.6*** | **60.4** | **4.2** | |
| ***Shrubland Vegetation*** | | | | | |
| Scalebroom Scrub | *Lepidospartum squamatum /* Ephemeral Annuals Association | 24.5 | 13.7 | 1.2 | S2 |
| Acton's and Virgin River Brittle Brush – Net-veined Goldeneye Scrub | *Encelia actonii* Association | 16.4 | 4.5 | 0.0 | S3 |
| California Joint-fir – Longleaf Joint-fir Scrub | *Ephedra californica* / Annual – Perennial Herb Association | 4.0 | 2.2 | 0.2 | S3 |
| Arroyo Willow Thickets | *Salix lasiolepis – Salix lucida* Association | 0.6 | 0.5 | 0.0 | S3? |
| | *Salix lasiolepis* Association | 0.5 | 0.5 | 0.0 | Yes[2] |
| Narrowleaf Goldenbush – Bladderpod Scrub | *Cleome isomeris* Association | 30.2 | 9.2 | 0.6 | Yes[2] |
| Cheesebush - Sweetbush Scrub | *Ambrosia salsola* Association | 10.7 | 4.0 | 0.3 | S4 |
| Mulefat Thickets | *Baccharis salicifolia* | 0.9 | 0.4 | 0.0 | S4 |
| Tucker Oak Chaparral | *Quercus john-tuckeri* Association | 0.7 | 0.6 | 0.0 | S4 |
| Wedge-leaf Ceanothus Chaparral, Buck Brush Chaparral | *Ceanothus cuneatus* Association | 1.6 | 0.9 | 0.1 | S4 |
| California Buckwheat Scrub | *Eriogonum fasciculatum* Association | 6.2 | 3.3 | 0.1 | S5 |
| Rubber Rabbitbrush Scrub | *Ericameria nauseosa* Association | 22.4 | 16.4 | 1.1 | S5 |

**Table 5.4-2. Natural Communities and Land Cover Types Mapped along the GKR Project Alignment**

| Vegetation Alliance | Vegetation Association | Area Mapped on GKR Project Alignment (acres) | Area Mapped within Anticipated Work Areas with Temporary Impacts (acres)[1] | Area Mapped within Anticipated Work Areas with Permanent Impacts (acres)[1] | California State Rarity Ranking |
|---|---|---|---|---|---|
| Tamarisk Thickets | *Tamarix* spp. Association | 3.5 | 1.3 | 0.0 | None |
| ***Total Acres Shrubland Vegetation*** | | ***122.3*** | ***57.6*** | ***3.8*** | |
| ***Herbaceous Vegetation*** | | | | | |
| Yerba mansa - Nuttall's Sunflower - Nevada Goldenrod Alkaline Wet Meadows | *Anemopsis californica Provisional Association* | 0.05 | 0.05 | 0.0 | S2 |
| | *Solidago (confinis, spectabilis) Provisional Association* | 0.02 | 0.02 | 0.0 | S2 |
| American Bulrush Marsh | *Schoenoplectus americanus / Lepidium latifolium* Association | 0.6 | 0.0 | 0.0 | S3.2 |
| Ashy Ryegrass – Creeping Ryegrass Turfs | *Leymus triticoides – Bromus* spp. *– Avena* spp. Association | 2.7 | 1.0 | 0.1 | S3 |
| Needle Grass – Melic Grass Grassland | *Nassella cernua* Association | 0.2 | 0.2 | 0.0 | S3 |
| Common Monkey Flower Seeps | *Mimulus guttatus* Association | 0.02 | 0.02 | 0.02 | S3? |
| Baltic and Mexican Rush Marshes | *Juncus arcticus* var. *balticus* Association | 15.8 | 9.0 | 1.5 | S4 |
| Saltgrass Flats | *Distichlis spicata – Hordeum murinum* Association | 2.4 | 1.1 | 0.3 | S4 |
| Wild Oats and Annual Brome Grasslands | *Bromus diandrus* - Mixed Herbs Semi-natural Association | 231.9 | 127.3 | 7.3 | None |
| | *Bromus hordeaceus – Amsinckia menziesii – Hordeum murinum* Semi-natural Association | 16.6 | 8.9 | 1.4 | None |
| Red Brome or Mediterranean Grass Grasslands | *Bromus rubens –* Mixed herbs Semi-natural Association | 66.0 | 31.1 | 3.5 | None |
| Cheatgrass – Medusahead Grassland | *Bromus tectorum – Bromus diandrus Semi-natural* Association | 2.9 | 1.9 | 0.2 | None |
| Perennial Pepper Weed Patches | *Lepidium latifolium* Semi-natural Association | 8.6 | 5.5 | 0.4 | None |
| ***Total Acres Herbaceous Vegetation*** | | ***347.9*** | ***185.9*** | ***14.8*** | |
| ***Total Acres Native Vegetation*** | | ***561.8*** | ***264.1*** | ***18.6*** | |
| ***Total Acres Non-native Vegetation*** | | ***81.0*** | ***39.8*** | ***4.1*** | |

**Table 5.4-2. Natural Communities and Land Cover Types Mapped along the GKR Project Alignment**

| Vegetation Alliance | Vegetation Association | Area Mapped on GKR Project Alignment (acres) | Area Mapped within Anticipated Work Areas with Temporary Impacts (acres)[1] | Area Mapped within Anticipated Work Areas with Permanent Impacts (acres)[1] | California State Rarity Ranking |
|---|---|---|---|---|---|
| | ***Total Acres All Vegetation*** | ***642.8*** | ***303.9*** | ***22.8*** | |
| | | | | | |
| Active Agriculture | | 407.0 | 128.6 | 10.6 | None |
| Ornamental/Landscaped (lawns, gardens, etc.) | | 1.5 | 0.4 | 0.0 | |
| Open Water (ponds, lakes, streams, rivers) | | 7.7 | 0.8 | 0.0 | |
| Developed (towers, roads, etc.) | | 182.1 | 73.8 | 6.5 | |
| Disturbed (cleared area supporting ruderal vegetation, if any) | | 33.4 | 17.2 | 1.0 | |
| Sparsely Vegetated Rock Outcrop | | 0.1 | 0.0 | 0.0 | |
| Sparsely Vegetated Streambed | | 3.2 | 1.3 | 0.1 | |
| | ***Total Acres All Areas*** | ***1,277.7*** | ***526.1*** | ***40.9*** | |

Notes:

1 Work areas as of May 2021

2 Alliance is not sensitive, but the association is sensitive on the 2020 CDFW Sensitive Natural Communities list

? A question mark represents a rank qualifier established by CDFW, denoting an inexact or uncertain numeric rank.

**Alliance Rarity Rankings (CDFW 2020b, Sawyer et. al 2009):**

S1: Fewer than 6 viable occurrences statewide and/or up to 518 hectares

S2: 6-20 viable occurrences statewide and/or 518-2,590 hectares

S3: 21-100 viable occurrences statewide and/or 2,590-12,950 hectares

S4: Greater than 100 viable occurrences statewide, and or more than 12,950 hectares

S5: Demonstrably secure because of its statewide abundance

**Additional Threat Ranks**

0.1: Very threatened

0.2: Threatened

0.3: No current threat known

Undeveloped lands (excluding active agriculture, landscaping, open water, disturbed, developed, and sparsely vegetated lands) account for approximately 50 percent of the survey area. Tree-dominated vegetation occurs along moist drainages and at higher elevations in the Tehachapi Mountains in Segments 2, 3, 4, and 5 covering 27 percent of vegetated areas within the GKR Project alignment. Four woodland and forest alliances are found in moist soils near drainages and water courses: California Sycamore Woodland, Fremont Cottonwood Forest, Goodding's Willow - Red Willow Riparian Woodlands, and Shining Willow Groves. The dominant trees in the willow thicket and California sycamore vegetation types within the GKR Project alignment have wetland indicator status designated by the United States Army Corps of Engineers (USACE, Lichvar et al. 2016). Another willow vegetation alliance, Arroyo Willow Thickets, is categorized as Shrubland in the California Native Plant Society (CNPS) Manual of California Vegetation (Sawyer et al. 2009).

Five woodland alliances are characteristic of wooded vegetation in mountainous and valley regions surrounding the Central Valley, including in the Coast Ranges, Sierra Nevada, Tehachapi Mountains, and other Transverse Ranges, and most of these alliances are dominated by one or more species of oak (*Quercus*); oak-dominated alliances comprise 88 percent of the woodland and forest vegetation within the GKR Project alignment. Valley Oak Woodland (*Quercus lobata* Woodland Alliance) often occupies rich, moist alluvial soils, whereas the remaining four woodland alliances have sometimes been generally called foothill woodland, due to their distribution below the conifer belt in regional mountains. Nineteen associations were mapped within these woodland alliances.

Shrublands account for 19 percent of the vegetated areas within the GKR Project alignment, with shrubland vegetation dominated by Narrowleaf Goldenbush – Bladderpod Scrub (*Cleome isomeris* Shrubland Alliance) covering 25 percent of the survey area within the GKR Project alignment, mostly on west-and south-facing slopes in the Tehachapi Mountains in Segments 2, 3, and 4. Rubber Rabbitbrush Scrub (*Ericameria nauseosa* Shrubland Alliance) covers 18 percent of the GKR Project alignment, mostly in small stands in the San Joaquin Valley in Segments 1 and 2 and in the disturbed moist valleys in the Tehachapi Mountains in Segments 2, 3, and 4.

Scalebroom Scrub (*Lepidospartum squamatum* Shrubland Alliance) occurred in ephemeral drainages and on dry slopes, mostly in Segment 1 as well as in Tejon Creek in Segment 2 where it crosses the GKR Project alignment, representing 20 percent of shrubland vegetation in vegetated areas. Four additional shrubland alliances occurred on upland slopes and rocky areas, especially on south-facing exposures, including Acton's and Virgin River Brittle Brush – Net-veined Goldeneye Scrub (*Encelia* [*actonii, virginensis*] – *Viguiera reticulata* Shrubland Alliance), California Buckwheat Scrub (*Eriogonum fasciculata* Shrubland Alliance), Wedge-leaf Ceanothus Chaparral, Buck Brush Chaparral (*Ceanothus cuneatus* Shrubland Alliance), and Tucker Oak Chaparral (*Quercus john-tuckeri* Shrubland Alliance).

Several observed shrubland alliances extend from the GKR Project region into the Mojave Desert: California Joint-fir - Longleaf Joint-fir Scrub (*Ephedra californica – Ephedra trifurca* Shrubland Alliance) on rocky substrates and Cheesebush - Sweetbush Scrub (*Ambrosia salsola – Bebbia juncea* Shrubland Alliance) in washes.

Herbaceous vegetation covers 54 percent of the survey area along the GKR Project alignment. Six native herbaceous alliances occur within marshes, seeps, or along moist margins of wetlands: American Bulrush Marsh (*Schoenoplectus americanus* Herbaceous Alliance), Ashy Ryegrass – Creeping Ryegrass Turfs (*Leymus cinereus – Leymus triticoides* Herbaceous Alliance), Baltic and Mexican Rush Marshes (*Juncus arcticus* [var. *balticus, mexicanus*] Herbaceous Alliance), Common Monkey Flower Seeps (*Mimulus* [*guttatus*] Herbaceous Alliance), Salt Grass Flats (*Distichlis spicata* Herbaceous Alliance), and Yerba Mansa – Nuttall's Sunflower – Nevada Goldenrod Alkaline Wet Meadows (*Anemopsis californica – Helianthus nuttallii – Solidago spectabilis* Herbaceous Alliance). The non-native Perennial Pepper Weed Patches (*Lepidium latifolium* Herbaceous Semi-Natural Alliance) also occurs in wetland areas. One alliance represents vegetation dominated by native bunchgrasses: Needle Grass - Melic Grass Grassland (*Nassella* spp. – *Melica* spp. Herbaceous Alliance). An additional three alliances are dominated by annual invasive grasses and occur in disturbed locations, including rangelands, comprising 91.2 percent of herbaceous vegetation within the GKR Project alignment: Wild Oats and Annual Brome Grasslands (*Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance), Cheatgrass – Medusahead Grassland (*Bromus tectorum – Taeniatherum caput-medusae* Herbaceous Semi-Natural Alliance), and Red Brome or Mediterranean Grass Grassland (*Bromus rubens – Schismus* [*arabicus*, *barbatus*] Herbaceous Semi-Natural Alliance).

These alliances and associations support a diverse range of wildlife species, including nesting and foraging birds, mammals (especially rodents), reptiles, amphibians, and invertebrates. New growth and blooming in spring and summer provides forage and nectar sources for many wildlife species, and vegetation associated with wetlands and drainages can be disproportionately important as wildlife habitat due to the availability of surface water, at least seasonally. Descriptions of each natural community are provided in Appendix C to this PEA document.

#### 5.4.1.3.1 Sensitive Natural Communities

Sensitive natural communities are defined as communities of limited distribution within California or within a county or region. These communities may or may not contain special-status species. CDFW has assigned Alliance Rarity Ratings to alliances included in the California Manual of Vegetation, Second Edition and in the updated California State Natural Communities List (Sawyer et al. 2009, CDFW 2020b). Sensitive natural communities are treated by CDFW as alliances or associations with "threat" ranks of S3 or higher (S1, S2, S3), whereas S4 and S5 rankings are not designated as sensitive or threatened (CDFW 2020c). The state ranking system for S3 and above includes the estimated number of existing acres in California for the sensitive natural communities. The rankings are defined as follows:

- S1, Critically Imperiled: Critically imperiled in California because of extreme rarity (often five or fewer occurrences) or because of some factor(s), such as very steep declines, making it especially vulnerable to extirpation from the state.
- S2, Imperiled: Imperiled in California because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state.
- S3, Vulnerable: Vulnerable in California due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

Table 5.4-2 lists 25 sensitive natural communities, representing 13 sensitive alliances and 22 sensitive associations that were observed within all segments of the GKR Project alignment, covering 96.5 acres, as shown on Figureset 5.4-1.

Scalebroom scrub is the sensitive natural community that occupies the largest area (24.5 acres) within the GKR Project alignment, followed by Acton's and Virgin River brittle brush – net-veined goldeneye scrub (16.4 acres), and valley oak woodland (15.4 acres).

Riparian, ephemeral wash, and wetland natural communities are generally treated as sensitive vegetation in California because of the abundance of common and special-status plant and wildlife species that can occupy these habitats. More than 60 acres of riparian and wetland vegetation were mapped along the GKR Project alignment, including but not limited to California Sycamore Woodland, Fremont Cottonwood Forest, Goodding's Willow - Red Willow Riparian Woodlands, Shining Willow Groves, Scalebroom Scrub (in part), Mulefat Thickets, Arroyo Willow Thickets, and wetland vegetation such as American Bulrush Marsh, Ashy Ryegrass – Creeping Ryegrass Turfs, Baltic and Mexican Rush Marshes, Common Monkey Flower Seeps, Salt Grass Flats, and Yerba Mansa – Nuttall's Sunflower – Nevada Goldenrod Alkaline Wet Meadows.

### *5.4.1.4 Aquatic Features*

Potentially jurisdictional wetlands and non-wetland waters occur throughout the GKR Project alignment. General wetland habitats that occur along the GKR Project alignment include emergent freshwater wetlands, scrub-shrub wetlands, and forested/woodland wetlands (Arcadis 2019b). Potentially jurisdictional waters found along the GKR Project alignment are generally classified as non-vegetated rivers, streams, and washes. Drainages identified within the GKR Project alignment include perennial drainages such as the Kern River, intermittent drainages including Caliente Creek, and ephemeral streams; the waters crossed by the GKR Project alignment are presented in Table 5.10-1.

Appendix C contains the *Wetlands and Other Waters Jurisdictional Delineation Report: Kern River 66 kV Subtransmission Line*. This document includes figures illustrating potentially jurisdictional waters and detailed tables of features identified along the GKR Project alignment.

### *5.4.1.5 Habitat Assessment*

#### 5.4.1.5.1 Special-status Plant Species

Special-status plants are defined as:

- Federally-listed species (i.e., plants listed as threatened or endangered under the Federal Endangered Species Act [FESA])
- Species that are candidates for possible future listing as threatened or endangered under FESA
- State-listed species (i.e., plants listed as threatened or endangered under CESA)
- Plants identified by CNPS with a California Rare Plant Rank (CRPR) of 1B or 2B meet the definition of rare or endangered under the CEQA, including species considered by the CNPS to be rare, threatened, or endangered in California (i.e., CRPRs 1A, 1B, 2A, 2B, and certain rank 3 and 4 species with local significance)
- Species designated as Sensitive by the USFS (USFS S); short portions of the GKR Project alignment are located on the SNF in the southern Sierra Nevada and LPNF in the San Emigdio Mountains

The desktop review identified 32 special-status plant species that have the potential to occur within 10 miles of the GKR Project alignment (Table 5.4-3 and Table 5.4-4). Two Federally Endangered plant species were observed within the GKR Project alignment during the 2017 – 2018 surveys: the Bakersfield cactus and Kern mallow. The Bakersfield cactus is also California Endangered, whereas the Kern mallow is not listed by CDFW but has a CRPR of 1B.2. Two additional annual species with CRPR of 1B.1 or 1B.2 occur within the GKR Project alignment, calico monkeyflower (*Diplacus* [*Mimulus*] *pictus*) and Piute Mountains navarretia (*Navarretia setiloba*), which is also a USFS Sensitive species. Locations of observed special-status plant species are shown in Figureset 5.4-2, and habitat and location information for observed special-status plant species are presented in Table 5.4-3, along with their potential to occur in other locations within the GKR Project alignment.

The Bakersfield cactus was observed on the south-facing slopes of Caliente Creek in Segment 1, where approximately 300 individuals occur. A 2011 California Natural Diversity Database (CNDDB) occurrence extends from the observed Bakersfield cactus stand northeast of Mountain View Road to the northeast up Caliente Creek Wash, crossing Highway 58 to its northern extent near Bena Road; a portion of this large stand of Bakersfield cactus outside of the GKR Project alignment occurs within the Sand Ridge Preserve, currently under the management of the Center for Natural Lands Management (CNLM 2020). Additional CNDDB observations of Bakersfield cactus have been reported on the west side of the Kern River approximately 0.1 mile west of the GKR Project alignment, near Cottonwood Creek, and in the Comanche Point area (CNDDB 2020). This species is a large, spreading, conspicuous cactus that is readily observed and identified at any time of the year; because it was not observed elsewhere during botanical surveys, it has been determined that Bakersfield cactus does not occur elsewhere within the GKR Project alignment.

**Table 5.4-3. Special-status Plant Species Observed within the GKR Project Alignment**

| Scientific Name | Common Name | Regulatory Status (Federally Listed/ California Listed/ CNPS/USFS) | Habitat in California | Potential to Occur within GKR Project Alignment | Documentation of Species within GKR Project Alignment Area |
|---|---|---|---|---|---|
| *Eremalche parryi* subsp. *kernensis* | Kern mallow | FE / - / 1B.2 / - | Occurs in dry, sandy to clay soils in pinyon juniper woodlands, foothill and valley grasslands, and at the edges of chenopod scrublands at elevations ranging from 330 to 3,300 feet above mean sea level (amsl). | Likely to occur in Segments 1 and 4 in open rocky areas in Acton's and Virgin River Brittle Brush – Net-veined Goldeneye Scrub and in Wild Oats and Annual Brome Grasslands at the edge of drainages. | Two observations totaling 151 individuals. One location in Segment 1 with 150 individuals was observed on an access road to a tower on the east side of the Kern River drainage and the second observation of one individual was located near Comanche Point in Segment 4. A 2012 CNDDB record of 160 plants was reported 0.5 mile east of the GKR Project alignment in the Tejon Hills. |
| *Diplacus* [*Mimulus*] *pictus* | calico monkeyflower | - / - / 1B.2 / - | Occurs in open areas in granitic soils between 440 and 4,100 ft amsl, often with blue oak and oak gooseberry nearby. | Likely to occur in Segment 4 in Blue Oak Woodland in the Tehachapi Mountains. | Seven observations totaling 15 individuals concentrated in the Tehachapi Mountains northwest of Stallion Springs in Segment 4. A 2013 CNDDB record was reported 1.2 miles east of the GKR Project alignment near Grapevine in an area underlain by the Tecuya granitic conglomerate formation. |
| *Navarretia setiloba* | Piute Mountains navarretia | - / - / 1B.1 / USFS S | Occurs in depressions in gravelly loam to clay soils in valley and foothill grasslands, oak and foothill woodlands, and pinyon juniper woodlands at elevations ranging from 1,640 to 6,900 ft amsl. | Likely to occur in Cheesebush – Sweetbush Scrub, Blue Oak Woodland, and Wild Oats and Annual Brome Grasslands in Segments 1, 2, and 4. | Seven observations totaling 313 individuals concentrated in three locations: the foothills of the Sierra Nevada south of Kern River Canyon in Segment 1; west of Interstate 5 in the San Emigdio Mountains in Segment 2; and in the Tehachapi Mountains west of Bear Valley Springs and east of Comanche Point in Segment 4. A 2009 CNDDB observation overlaps the alignment in Fort Tejon State Historic Park. |
| *Opuntia basilaris* var. *treleasei* | Bakersfield cactus | FE / CE / 1B.1 / - | Occurs in sandy or gravelly substrate in chenopod scrub, cismontane woodland, and valley and foothill grassland at elevations ranging from 400 to 4,760 ft amsl. | Likely to occur in Caliente Wash in Segment 1 in California Joint-fir - Longleaf Joint-fir Scrub and Scalebroom Scrub. | Two observations totaling 301 individuals concentrated in one location in Segment 1 - Caliente Creek Wash. A 2011 CNDDB occurrence extends from the observed Bakersfield cactus stand up Caliente Creek Wash, crossing Highway 58 to its northern extent near Bena Road. Additional CNDDB observations have been reported on the west side of the Kern River approximately 0.1 mile west of the GKR Project alignment, near Cottonwood Creek, and in the Comanche Point area. |

## Table 5.4-3. Special-status Plant Species Observed within the GKR Project Alignment

**Notes:**
*CDFW (CNDDB). 2020. California Natural Diversity Data Base. RareFind Version 5. Sacramento, California.*
Based on CNDDB (2020) review of the following quads that are intersected by the GKR Project alignment: Arvin, Bear Mountain, Cummings Mountain, Edison, Frazier Mountain, Grapevine, Lebec, Pastoria Creek, Rio Bravo Ranch, Tehachapi South, Tejon Hills, and Tejon Ranch.
Records from California Consortium of Herbaria (CCH 2019) also reviewed.

**Status Codes**

**United States Fish and Wildlife Service (USFWS)**
FE Federal Endangered
FT Federal Threatened

**California Department of Fish and Wildlife (CDFW)**
CE California Endangered
CT California Threatened
CR California Rare

**United States Forest Service (USFS) Sequoia and Los Padres National Forests**
USFS S USFS Sensitive Species

**California Native Plant Society (CNPS)**
List 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
List 3: Plants About Which We Need More Information - A Review List

**Extensions to List Categories**
.1 – Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 – Fairly endangered in California (20-80% occurrences threatened)
.3 – Not very endangered in California (<20% of occurrences threatened, or no current threats known)

**Table 5.4-4. Special-status Plant Species Not Observed within the GKR Project Alignment, but Reported in CNDDB and/or CCH for Surrounding Area**

| Scientific Name | Common Name | Regulatory Status (Federally Listed/California Listed/CNPS/USFS) | Habitat in California | Potential to Occur within the GKR Project Alignment | Documentation of Species Presence Within or Near the GKR Project Alignment Area |
|---|---|---|---|---|---|
| ***Sensitive Plant Species Not Observed within GKR Project Alignment but Reported in CNDDB and/or CCH for Surrounding Area*** | | | | | |
| *Allium howellii* var. *clokeyi* | Mt. Pinos onion | - / - / 1B.3 / USFS S | Occurs in clay soils in Great Basin scrub, meadows and seeps, and pinyon and juniper woodland at elevations ranging from 4,260 to 6,070 ft amsl. | The Mt. Pinos onion does not occur within the GKR Project alignment, based on the absence of recent records within the alignment as well as the absence of suitable habitat. | There is one CNDDB record within 8 miles of the GKR Project alignment. A 1925 record slightly occurs east of the Cummings Substation. |
| *Astragalus hornii* var. *hornii* | Horn's milk-vetch | - / - / 1B.1 / - | Occurs in salty flats and lake shores and margins of playas, meadows and seeps at elevations ranging from 200 to 1,000 ft amsl. | Horn's milk-vetch does not occur within the GKR Project alignment because there are currently no suitable alkaline conditions favored by this species, such as near playas, seeps, and lake shores within the GKR Project area. | There is one CNDDB record that overlaps the GKR Project alignment and multiple occurrences near Bakersfield along the Kern River, however all were reported more than 75 years ago. |
| *California macrophylla* | round-leaved filaree | - / - / 1B.2 / - | Occurs in clayey soils in cismontane woodlands and grasslands at elevations ranging from 50 to 4,000 ft amsl. | Round-leaved filaree is unlikely to occur within the GKR Project alignment and only between Stallion Springs and Arvin in Segment 4, where grasslands are underlain by clay soils below 4,000 ft amsl. | There are no CNDDB records for this species near the GKR Project alignment. There are seven CCH records within 3.5 miles of the alignment: two were reported more than 100 years ago, two records were reported in 2015, and one in 2016 in the western Tehachapi Mountains 3.2 miles southwest of the GKR Project alignment on a ridge above Comanche Creek. |
| *Calochortus palmeri* var. *palmeri* | Palmer's mariposa-lily | - / - / 1B.2 / USFS S | Occurs in moist areas in chaparral, lower montane coniferous forest, and meadows and seeps at elevations ranging from 2,330 to 7,200 ft amsl. | Palmer's mariposa-lily is unlikely to occur within the southern portions of the GKR Project alignment near Castac Lake in Segments 2 and 3. | A 2014 CNDDB record was reported approximately 0.75 miles southeast of the GKR Project alignment at Comanche Point in the Tehachapi Mountains. A 1964 record was reported approximately 350 feet southwest of the GKR Project alignment in clay soils in oak woodland in the Castac Valley. A 2013 record was reported 0.65 miles southwest of the GKR Project alignment in non-native grassland southwest of Gorman Creek in Peace Valley. |
| *Calochortus striatus* | alkali mariposa-lily | - / - / 1B.2 / USFS S | Occurs on alkali soils and moist locations in chaparral, chenopod scrub, Mojavean desert scrub, and in meadows and seeps at | Alkali mariposa lily does not occur within the GKR Project alignment, based on the absence of moist alkaline springs and meadows | There are 113 CNDDB occurrences of alkali mariposa lily near the GKR Project alignment, the majority occur are mapped in Antelope Valley between Edwards Air Force Base and Lancaster. A |

**Table 5.4-4. Special-status Plant Species Not Observed within the GKR Project Alignment, but Reported in CNDDB and/or CCH for Surrounding Area**

| Scientific Name | Common Name | Regulatory Status (Federally Listed/California Listed/CNPS/USFS) | Habitat in California | Potential to Occur within the GKR Project Alignment | Documentation of Species Presence Within or Near the GKR Project Alignment Area |
|---|---|---|---|---|---|
| | | | elevations ranging from 2,600 to 4,600 ft amsl. | within the alignment in the vicinity of known locations. | 2017 record was reported 0.3 miles east of the GKR Project alignment in the Tehachapi Mountains near Comanche Point at Amargo Springs. |
| *Caulanthus californicus* | California jewelflower | FE / CE / 1B.1 / - | Occurs in grasslands and shrublands at elevations ranging from 260 to 5,200 ft amsl. | California jewelflower does not occur within the GKR Project alignment, the range of this species occurs more than 3 miles from the GKR Project alignment. | There are four CNDDB records within 5 miles of the GKR Project alignment, all of which were reported more than 80 years ago. A 2015 CCH observation was reported approximately 3.2 miles southwest of Segment 2 on a south-facing slope above Comanche Creek. |
| *Caulanthus lemmonii* | Lemmon's jewelflower | - / - / 1B.2 / USFS S | Occurs in grasslands and shrublands at elevations ranging from 260 to 5,200 ft amsl. | Lemmon's jewelflower does not occur within the GKR Project alignment; the known range of this species occurs more than 4 miles from the GKR Project alignment. | There are ten CNDDB records for Lemmon's jewelflower in Kern County. Only one record was reported within 5 miles of the GKR Project alignment, a 1991 record reported 4.6 miles northwest of the alignment near Wheeler Ridge. |
| *Clarkia tembloriensis* subsp. *calientensis* | Vasek's clarkia | - / - / 1B.1 / - | Occurs in rocky areas in valley and foothill grassland habitats at approximately 1,640 ft amsl. | Vasek's clarkia does not occur within the GKR Project alignment, based on lack of observations within 2 miles of the GKR Project alignment and the lack of recent records within the GKR Project area. | There are only three CNDDB records reported in Kern County, all located near Caliente Creek northeast of the alignment. The closest record to the GKR Project alignment was reported 2.9 miles from the alignment southwest of Bena in 1986. |
| *Delphinium purpusii* | rose-flowered larkspur | - / - / 1B.3 / USFS S | Occurs in rocky granitic and carbonate soils in chaparral and woodland vegetation at elevations ranging from 984 to 4,396 ft amsl. | Rose-flowered larkspur is unlikely to occur but may be potentially present within the GKR Project alignment immediately adjacent to the Kern Canyon Hydro Generating Facility, where it was last reported almost 25 years ago. | The closest CNDDB records for this species to the GKR Project alignment were reported in the Kern River drainage. A 1996 record was reported on granitic sand on a north-facing slope immediately north of the Kern Canyon Hydro Generating Facility. Additional records occur further up the Kern River drainage from this location. |
| *Eriastrum tracyi* | Tracy's eriastrum | - / CR / 3.2 / USFS S | Occurs on rocky shale or clay soils in chaparral and woodlands at elevations ranging from 1,310 to 5,840 ft amsl. | Tracy's eriastrum is unlikely to occur but may be potentially present within the GKR Project alignment near Castac Lake and in the Crane Valley in open wooded areas in gravelly clay soils. | A 1910 CNDDB record was reported 7 miles east of the GKR Project alignment in the Tehachapi Valley. Five 2007 records were reported northeast and southeast of Castac Lake, mostly upslope from Segment 3; the closest occurrence is within 0.5 mile of Segment 3 near the Crane Valley. |

**Table 5.4-4. Special-status Plant Species Not Observed within the GKR Project Alignment, but Reported in CNDDB and/or CCH for Surrounding Area**

| Scientific Name | Common Name | Regulatory Status (Federally Listed/California Listed/CNPS/USFS) | Habitat in California | Potential to Occur within the GKR Project Alignment | Documentation of Species Presence Within or Near the GKR Project Alignment Area |
|---|---|---|---|---|---|
| *Eriogonum callistum* | Tehachapi buckwheat | - / - / 1B.1 / - | Endemic to limestone outcrops in chaparral at elevations ranging from 4,600 to 4,900 ft amsl. | Tehachapi buckwheat does not occur within the GKR Project alignment; the alignment is below the elevational range for this species in the southern Tehachapi Mountains and there are no limestone outcrops within the alignment. | There are only six CNDDB locations in Kern County in the southern Tehachapi Mountains and all are east of the GKR Project alignment on ridges above 4,500 ft amsl, which is above the maximum elevation of the alignment in this area. |
| *Eriophyllum lanatum* var. *hallii* | Fort Tejon woolly sunflower | - / - / 1B.1 / USFS S | Occurs in rocky soils in foothill woodland and chaparral at elevations ranging from 3,500 to 4,670 ft amsl. | Fort Tejon woolly sunflower is unlikely to occur but may be potentially present within the GKR Project alignment in wooded vegetation above 3,500 ft amsl near and south of Fort Tejon State Historic Park, based on the presence of potential habitat in these areas. | There are only six CNDDB records of Fort Tejon woolly sunflower, and four are in Kern County in the southern Tehachapi Mountains. Two observations were reported 0.8 mile west of the GKR Project alignment in 1905 and 1995 in Johnson Canyon and Little Johnson Canyon above 3,500 ft amsl. Two 2004 observations were reported more than 4 miles east of the alignment to the east of Castac Lake. |
| *Eschscholzia lemmonii* subsp. *kernensis* | Tejon poppy | - / - / 1B.1 / - | Occurs in heavy clay soils in grasslands and chenopod scrub at elevations ranging from 650 to 3,300 ft amsl. | Tejon poppy is likely to occur within the GKR Project alignment in heavy clay soils in grassland vegetation in and near Fort Tejon State Historic Park and Comanche Point. | There are six CNDDB records within 2 miles of the GKR Project alignment. A 2002 record overlaps the alignment within Fort Tejon State Historic Park. Two records were reported within 0.7 miles east of the alignment on slopes above Comanche Point, one in 2012 and one in 2017. |
| *Fritillaria striata* | striped adobe-lily | - / CT / 1B.1 / USFS S | Occurs in heavy clay soil found in grassland and foothill woodlands at elevations below 3,280 ft amsl. | Striped adobe-lily does not occur within the GKR Project alignment. There are no overlapping records within 2 miles of the alignment in suitable habitat. | CNDDB records for the striped adobe-lily in the GKR Project area are concentrated in two areas: 1) northwest of the GKR Project alignment and north of the Kern River; the alignment is on the south side of the Kern River drainage south of the Kern River Hydro Generating Facility; and 2) more than 2 miles south of the alignment southwest of Stallion Springs in the Tehachapi Mountains. |
| *Heterotheca shevockii* | Shevock's golden-aster | - / - / 1B.3 / USFS S | Occurs in sandy substrates in grassland and adjacent open shrublands and woodlands at | Shevock's golden-aster is unlikely to occur within the GKR Project alignment but may be potentially present immediately adjacent to | There are two 1996 CNDDB records within or near the GKR Project alignment. One observation was reported immediately north of the Kern Canyon |

**Table 5.4-4. Special-status Plant Species Not Observed within the GKR Project Alignment, but Reported in CNDDB and/or CCH for Surrounding Area**

| Scientific Name | Common Name | Regulatory Status (Federally Listed/California Listed/CNPS/USFS) | Habitat in California | Potential to Occur within the GKR Project Alignment | Documentation of Species Presence Within or Near the GKR Project Alignment Area |
|---|---|---|---|---|---|
| | | | elevations ranging from 755 to 2,953 ft amsl. | the Kern Canyon Hydro Generating Facility. | Hydro Generating Facility, and the second was reported slightly up-river within Kern Canyon. |
| *Lasthenia glabrata* subsp. *coulteri* | Coulter's goldfields | - / - / 1B.1 / - | Occurs in saline places, vernal pools, margins of coastal marshes and swamps, and playas at elevation below 3,280 ft amsl. | Coulter's goldfields does not occur within the GKR Project alignment, there are no coastal salt marshes, playas, or vernal pools within the alignment. | There are eight occurrences of Coulter's goldfields reported in Kern County, but only one, a 1905 record, occurs within 10 miles of the GKR Project alignment and it is considered 'possibly extirpated'; it was reported approximately 2 miles north of the alignment in Tehachapi. |
| *Layia heterotricha* | pale yellow layia | - / - / 1B.1 / USFS S | Occurs in alkaline or clay soils in shrubland and woodland habitats at elevations ranging from 650 to 5,900 ft amsl. | Pale yellow layia does not currently occur within the GKR Project alignment in the Tehachapi Valley; there are no alkaline soils within the alignment. | A 1933 record for pale yellow layia occurs 7 miles east of the GKR Project alignment in the Tehachapi Valley. Additional observations of pale yellow layia in the past 25 years occur more than 5 miles east of the eastern terminus of the GKR Project alignment in and above the Tehachapi Valley. |
| *Layia leucopappa* | Comanche Point layia | - / - / 1B.1 / - | Occurs on vernally wet, whitish clay soils on flats in chenopod scrub and grassland vegetation at elevations ranging from 330 to 1,050 ft amsl. | Comanche Point layia is unlikely to occur within the GKR Project alignment but may be potentially present in the Comanche Point area only in vernally wet, whitish clay soils in chenopod scrub and grassland vegetation below 1,000 ft amsl. | There are ten CNDDB records in the southern end of the San Joaquin Valley, and nine are within 1 mile of the GKR Project alignment. A 2016 record was reported 0.25 miles east of the alignment. Four 2013 records were reported 2 miles east of the alignment and south of Comanche Point. The other four records were reported more than 25 years ago. |
| *Layia munzii* | Munz's tidy-tips | - / - / 1B.2 / - | Occurs in chenopod scrub and valley and grassland habitat at elevations ranging from 160 to 2,620 ft amsl. | Munz's tidy-tips does not occur within the GKR Project alignment due to lack of suitable habitat and recent records within the alignment. | A 1935 CNDDB record was reported approximately 1.5 miles west of the GKR Project alignment near Arvin; the exact location of the record is unknown and may represent an extirpated population. |
| *Leptosiphon serrulatus* | Madera leptosiphon | - / - / 1B.2 / USFS S | Occurs in open cismontane woodland and lower montane coniferous forest vegetation, often in decomposed granite at elevations ranging from 980 to 4,260 ft amsl. | Madera leptosiphon does not occur within the GKR Project alignment. There are no records within 3 miles of the GKR Project alignment. | A 1935 CNDDB record was reported approximately 3.5 miles south of the GKR Project alignment in the Tehachapi Mountains. |

**Table 5.4-4. Special-status Plant Species Not Observed within the GKR Project Alignment, but Reported in CNDDB and/or CCH for Surrounding Area**

| Scientific Name | Common Name | Regulatory Status (Federally Listed/California Listed/CNPS/USFS) | Habitat in California | Potential to Occur within the GKR Project Alignment | Documentation of Species Presence Within or Near the GKR Project Alignment Area |
|---|---|---|---|---|---|
| *Monardella linoides* subsp. *oblonga* | Tehachapi monardella | - / - / 1B.3 / USFS S | Occurs in granitic soils on dry slopes in forest and woodland habitats at elevations ranging from 2,952 to 8,500 ft amsl. | Tehachapi monardella does not occur within the GKR Project alignment due to lack of suitable habitat and recent records within the alignment. | There are two CNDDB records within 7 miles of the GKR Project alignment, both reported more than 90 years ago near Tehachapi in coniferous forest vegetation. |
| *Monolopia congdonii* | San Joaquin woollythreads | FE / - / 1B.2 / - | Occurs in sandy locations in grasslands and chenopod scrub at elevations ranging from 295 to 2,300 ft amsl. | San Joaquin woollythreads is unlikely to occur within the GKR Project alignment but may be potentially present where the alignment crosses Caliente Creek. | CNDDB records for San Joaquin woollythreads are concentrated north and west of Bakersfield. All recent records are reported from the western side of the San Joaquin Valley, and this species may be extirpated from the eastern portions of the valley. A 1988 record overlaps the GKR Project alignment at the mouth of Kern Canyon; this occurrence may be extirpated. A 1987 record was reported approximately 0.3 miles northeast of the GKR Project alignment along Caliente Creek. |
| *Navarretia peninsularis* | Baja navarretia | - / - / 1B.2 / USFS S | Occurs on moist soils in meadows and seeps in open areas in chaparral, lower montane coniferous forest and pinyon and juniper woodlands at elevations ranging from 4,600 to 7,600 ft amsl. | Baja navarretia does not occur within the GKR Project alignment due to lack of suitable habitat within the alignment. | A 1908 CNDDB record was reported 1.6 miles south of the Cummings Substation in Water Canyon in the Tehachapi Mountains. A 2004 record was reported 1.1 miles north of the Bailey Substation more than 10 miles east of the alignment. |
| *Nemacladus secundiflorus* var. *robbinsii* | Robbins' nemacladus | - / - / 1B.2 / USFS S | Occurs on dry gravelly slopes in chaparral and valley and foothill grasslands at elevations ranging from 1,150 to 5,580 ft amsl. | Robbins' nemacladus does not occur within the GKR Project alignment, based on the lack of recent observations within the GKR Project area. | There are only 9 CNDDB records for this species, one of which was reported more than 40 years ago 2.8 miles southwest of the Gorman Substation in Hungry Valley. |
| *Pseudobahia peirsonii* | San Joaquin adobe sunburst | FT / CE / 1B.1 / - | Occurs in heavy, adobe clay soils in grasslands and woodlands along the eastern and southern margins of the San Joaquin Valley and adjacent foothills at elevations ranging from 320 to 3,000 ft amsl. | San Joaquin adobe sunburst is unlikely to occur in the western Tehachapi Mountains east of Comanche Point, but may be potentially present where heavy adobe clay soils are present in Segment 4. | There are no observations of the San Joaquin adobe sunburst that overlap the GKR Project alignment. One 2016 CNDDB record was reported 3 miles southeast of the alignment in the western Tehachapi Mountains east of Comanche Point; additional observations in this portion of the Tehachapi Mountains are reported in CCH. |

**Table 5.4-4. Special-status Plant Species Not Observed within the GKR Project Alignment, but Reported in CNDDB and/or CCH for Surrounding Area**

| Scientific Name | Common Name | Regulatory Status (Federally Listed/California Listed/CNPS/USFS) | Habitat in California | Potential to Occur within the GKR Project Alignment | Documentation of Species Presence Within or Near the GKR Project Alignment Area |
|---|---|---|---|---|---|
| *Stylocline citroleum* | oil neststraw | - / - / 1B.1 / - | Occurs in clay often crusted soils and dry drainage edges in chenopod scrub and valley and foothill grassland at elevations ranging from 197 to 984 ft amsl. | Oil neststraw does not occur within the GKR Project alignment; its known range occurs outside the alignment. | The only CNDDB record of oil neststraw near the GKR Project alignment was reported in 1935 2 miles east of Bakersfield. |
| *Symphyotrichum defoliatum* | San Bernardino aster | - / - / 1B.2 / USFS S | Occurs on moist or seasonally flooded soil in meadows, seeps, marshes, swamps, grasslands and disturbed places in valley and foothill grassland, coastal scrub, cismontane woodland, and lower montane coniferous forest habitats at elevations below 6,725 ft amsl. | San Bernardino aster does not occur within the GKR Project alignment, based on the absence of recent records and that the primary range for this species is outside of the GKR Project area. | One CNDDB record for the San Bernardino aster was reported in 1935 near Lebec in the southern Tehachapi Mountains; however, the location data are considered questionable. |
| *Viola pinetorum* subsp. *grisea* | grey-leaved violet | - / - / 1B.2 / - | Occurs in moist soils in coniferous forests and subalpine habitats at elevations ranging from 6,500 to 12,200 ft amsl. | Grey-leaved violet does not occur within the GKR Project alignment because the alignment occurs below the minimum elevation for this species. | A 1968 CNDDB record for the grey-leaved violet was reported approximately 5 miles south of the Highwind Substation located in the Tehachapi Mountains on Double Mountain. |

**Notes:**

*CDFW (CNDDB). 2020. Natural Diversity Data Base. RareFind Version 5. Sacramento, California.*

Based on CNDDB (2020) review of the following quads that are intersected by the GKR Project alignment: Arvin, Bear Mountain, Cummings Mountain, Edison, Frazier Mountain, Grapevine, Lebec, Pastoria Creek, Rio Bravo Ranch, Tehachapi South, Tejon Hills, and Tejon Ranch.

Records from California Consortium of Herbaria (CCH 2019) also reviewed.

*Consortium of California Herbaria (CCH). 2020. Gateway to California vascular plant specimens. ucjeps.berkeley.edu/consortium*

**Status Codes**

**United States Fish and Wildlife Service (USFWS)**
FE Federal Endangered
FT Federal Threatened

**California Department of Fish and Wildlife (CDFW)**
CE California Endangered
CT California Threatened
CR California Rare

**United States Forest Service (USFS) Sequoia and Los Padres National Forests**
USFS S USFS Sensitive Species

**California Native Plant Society (CNPS)**
List 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
List 3: Plants About Which We Need More Information - A Review List

**Extensions to List Categories**
.1 – Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 – Fairly endangered in California (20-80% occurrences threatened)
.3 – Not very endangered in California (<20% of occurrences threatened, or no current threats known)

Kern mallow is a subspecies of *Eremalche parryi* that is a narrow endemic to western Kern County and nearby San Luis Obispo County; the more widespread and non-sensitive Parry's mallow (*Eremalche parryi* subsp. *parryi*) has a broader distribution in California (CNPS 2020). Kern mallow was observed in two different locations within the GKR Project alignment during the sensitive plant surveys. Approximately 150 individuals of Kern mallow occurred within Segment 1 along an access road to a tower west of Mount Adelaide on the east side of the Kern River drainage. A second location with one individual was documented in Segment 4 at the base of the foothills of the Tehachapi Mountains northeast of Comanche Point; additional CNDDB records have been reported from several locations in the western Tehachapi Mountains near Comanche Point (CNDDB 2020). These are the only two locations where Kern mallow is likely to occur within the GKR Project alignment.

Four additional listed plant species are reported from the GKR Project region but were not observed during the special-status plant surveys, the Federally Endangered and California Endangered California jewelflower (*Caulanthus californicus*), Federally Threatened and California Endangered San Joaquin adobe sunburst (*Pseudobahia peirsonii*), Federally Endangered San Joaquin woollythreads (*Monolopia congdonii*), and California Rare Tracy's eriastrum (*Eriastrum tracyi*).

There are four CNDDB records for California jewelflower within 5 miles of the GKR Project alignment, all of which are possibly or likely extirpated. A 1933 record was reported 2 miles west of Segment 1 along the Kern River. A 1940 record was reported 4.75 miles north of the existing Kern River 1 Hydroelectric Substation. A 1925 record was reported approximately 1.2 miles east of Segment 1 near Caliente Creek. A 1935 record was reported 0.4 miles west of Segment 1 south of the City of Arvin (CNDDB 2020). A 2015 CCH observation was reported approximately 3.2 miles southwest of Segment 2 on a south-facing slope above Comanche Creek (CCH 2020). The California jewelflower is unlikely to occur within the GKR Project alignment. This conspicuous plant has not been observed near the alignment in the past 80 years, populations near Caliente Creek and the City of Arvin have been extirpated, and populations within the Tehachapi Mountains above Comanche Creek are more than 3.2 miles from the alignment.

There are two CNDDB records for San Joaquin adobe sunburst within 10 miles of the GKR Project alignment. A 2016 record was reported approximately 10 miles east of Segment 1 in the foothills of the Sierra Nevada northeast of the community of Caliente. A 2016 record was reported 3 miles southeast of Segment 2 in the western Tehachapi Mountains east of Comanche Point (CNDDB 2020); additional observations in this portion of the Tehachapi Mountains are also reported in CCH (2020). The San Joaquin adobe sunburst only occurs in heavy clay soils and there are no observations that overlap the GKR Project alignment. This species is unlikely to occur in Segment 4 in the western Tehachapi Mountains east of Comanche Point and does not occur in other portions of the alignment.

There are 100 CNDDB records for San Joaquin woollythreads in the San Joaquin Valley in the area surrounding the City of Bakersfield. All recent records are reported from the western side of the San Joaquin Valley, and this species may be extirpated from the eastern portions of the valley. A 1988 record overlaps the GKR Project alignment in Segment 1 where it is generally mapped at the mouth of Kern Canyon; this occurrence may be extirpated. A 1987 record was reported approximately 0.3 miles east of the GKR Project alignment in the Sand Ridge Preserve along Caliente Creek. A 1935 record was reported approximately 0.5 miles west of the GKR Project alignment south of the City of Arvin (CNDDB 2020). San Joaquin woollythreads is unlikely to occur within the GKR Project alignment but may be potentially present in Segment 1 where the alignment crosses Caliente Creek.

A 1910 CNDDB record of Tracy's eriastrum was reported 7 miles east of the GKR Project alignment in the Tehachapi Valley. Five 2007 records were reported northeast and southeast of Castac Lake, mostly upslope from Segment 3; the closest occurrence is within 0.5 mile of Segment 3 near the Crane Valley (CNDDB

2020). Tracy's eriastrum is unlikely to occur within the GKR Project alignment, but may be potentially present, near Castac Lake and Crane Valley in open wooded areas in gravelly clay soils.

Table 5.4-4 lists special-status plant species that were not observed along the GKR Project alignment along with their potential to occur on the alignment. All CNDDB special-status plant species records reported within the GKR Project alignment are presented in Figureset 5.4-3 (CNDDB 2020).

Details about observed special-status plant species, including habitat requirements, species descriptions, and life history, are provided in Appendix C. In addition, the reports in Appendix C include discussions and tables summarizing whether or not special-status plant species have a potential to occur within the GKR Project alignment, as well as special-status plant species observed at reference sites but not observed along the GKR Project alignment.

#### 5.4.1.5.2 Special-status Wildlife Species

Special-status wildlife species are defined as:

- Species listed or candidates for listing as threatened or endangered under FESA
- Species considered "sensitive" by the USFS
- Species listed or candidates for listing as threatened or endangered under the CESA
- CDFW Fully Protected species
- Species designated as California Species of Special Concern (CSC) by the CDFW
- Migratory birds and any of their parts, eggs, and nests, as protected by the Migratory Bird Treaty Act (MBTA)
- Furbearing mammals, as protected from take by California Fish and Game Code CCR 14 § 460

Fifty-four special-status wildlife species have the potential to occur within 10 miles of the GKR Project alignment. Of these, 13 special-status wildlife species were observed along the GKR Project alignment during special-status wildlife surveys. A single individual of a Federally-listed candidate species, the monarch butterfly (*Danaus plexippus plexippus*), was observed during surveys performed along the GKR Project alignment; this individual did not occur near milkweed or an over-wintering population. One Federally-listed and California-listed species, the San Joaquin kit fox, and one additional California-listed species, the tricolored blackbird (*Agelaius tricolor*), were observed within the GKR Project alignment during the special-status wildlife surveys. One species designated by CDFW as Fully Protected was observed along the GKR Project alignment (the golden eagle [*Aquila chrysaetos*]), along with nine CSC species: western spadefoot (*Spea hammondii*), burrowing owl (*Athene cunicularia*), Vaux's swift (*Chaetura vauxi*), northern harrier (*Circus hudsonius*), loggerhead shrike (*Lanius ludovicianus*), Oregon vesper sparrow (*Pooecetes gramineus affinis*), purple martin (*Progne subis*), yellow warbler (*Setophaga petechia*), and American badger (*Taxidea taxus*).

Locations of observed special-status wildlife species are shown in Figureset 5.4-4, and habitat and location information for observed special-status wildlife species are presented in Table 5.4-5, along with their potential to occur in other locations along the GKR Project alignment.

Table 5.4-6 lists the special-status wildlife species that were not observed along the GKR Project alignment along with their potential to occur on the alignment. All CNDDB special-status wildlife species records reported within the GKR Project alignment are presented in Figureset 5.4-5 (CNDDB 2020).

**Table 5.4-5. Special-status Wildlife Species Observed within the GKR Project Alignment**

| Scientific Name | Common Name | Regulatory Status (Federal/California /USFS) | Habitat in California | Potential to Occur within GKR Project Alignment | Documentation of Species within GKR Project Alignment |
|---|---|---|---|---|---|
| ***Amphibians*** | | | | | |
| *Spea hammondii* | western spadefoot | - / CSC / - | Occurs primarily in grassland habitats in open areas within woodlands, shrublands, and washes and floodplains in sandy or gravelly soils. Vernal pools and seasonal ponds are essential for breeding. Endemic to California and northern Baja-California. Found in Central Valley and associated foothills into the Transverse and western Peninsular ranges. | Likely to occur in Segment 4 where a stock pond is located south of the GKR Project alignment near a ridgetop at 3,200 ft amsl northwest of Stallion Springs; it is unlikely to occur within the alignment in valleys and on lower slopes of the Tehachapi Mountains or in other seasonal wetlands in grassy areas. | Two western spadefoot adults were observed in Segment 4 at the edge of a stock pond located within 0.01 mile of the GKR Project alignment; this pond occurs just south of the alignment at 3,200 ft amsl within a grassy opening in Blue Oak Woodland. |
| ***Birds*** | | | | | |
| *Agelaius tricolor* | tricolored blackbird | - / CT, CSC (nesting colony) / - | Occurs in wetlands, swamps, and cattail or tule marshes and commonly forage in fields and farms. Nests in marsh habitats in bulrushes, willows, or other riparian vegetation at the water's edge, sometimes in tall growth in drier fields. Found in the Central Valley and surrounding foothills, coastal and inland localities in southern and central California, scattered sites in northeastern California. | Likely to occur in Segment 2 along Grapevine Creek in the Castac Valley in Salt Flats and Baltic and Mexican Rush Marshes and nest in Segment 3 at Castac Lake; it may nest near Segment 3 between Gorman and Bailey substations, as well as at Brite Lake 3 miles east of the Banducci Substation. | One group of eight individuals was observed in Segment 2 along Grapevine Creek in the Castac Valley between Fort Tejon State Historic Park and Lebec. Nesting CNDDB records include a 2011 record reported approximately 1 mile southeast of the Gorman Substation in a tributary to Gorman Creek and an undated potential nesting occurrence in Segment 3 at the southern end of Castac Lake. A 1988 eBird observation of a probable nesting colony was reported west of Segment 2 and east of Wheeler Ridge, and a 2018 observation of greater than 80 birds was reported at Brite Lake 3 miles east of the Banducci Substation. |
| *Aquila chrysaetos* | golden eagle | - / FP, WL (nesting and wintering) / - | Occurs in cliff-walled canyons that provide suitable nesting habitat and in large trees and open areas within foothills, mountain areas, sage-juniper flats, and deserts. | Likely to forage within the GKR Project alignment in a variety of habitats and is also likely to nest in Segment 4; it could nest elsewhere within the GKR Project alignment, especially in trees and on utility structures, but is unlikely to do so, based on existing nesting data. | One golden eagle and eaglet in an active nest were observed in a tower on an adjacent alignment within 0.1 mile of Segment 4 at 3,200 ft amsl. One golden eagle adult was observed perching on a pole in Segment 4 southeast of Arvin and the California Aqueduct at 600 ft amsl. A 1949 CNDDB nesting record was reported east of the Gorman Substation , and a 2004 record of a golden eagle in a pine “nest tree” was reported east of Segment 3 within a tributary to Gorman Creek. |

**Table 5.4-5. Special-status Wildlife Species Observed within the GKR Project Alignment**

| Scientific Name | Common Name | Regulatory Status (Federal/California /USFS) | Habitat in California | Potential to Occur within GKR Project Alignment | Documentation of Species within GKR Project Alignment |
|---|---|---|---|---|---|
| *Athene cunicularia* | burrowing owl | - / CSC (burrow sites & some wintering sites) / - | Occurs mainly in grassland and open scrub from the seashore to interior California and is strongly associated with ground squirrel burrows. | Likely to occur in Segments 2 and 4 in grassland vegetation in one location - at the base of the western foothills of the Tehachapi Mountains northeast of Comanche Point and southeast of Arvin. The burrowing owl could occur elsewhere within the GKR Project alignment in suitable habitat such as near Lebec but is unlikely to do so, based on existing observation and nesting data. | A single burrowing owl and two active burrows were observed in Segment 4 southeast of Arvin and east of the California Aqueduct at 600 ft amsl. CNDDB and eBird observations of the burrowing owl within the past 20 years have been reported in only two locations, in or within 2 miles of Segments 2 and 4 both north and south of Comanche Point at the base of the western foothills of the Tehachapi Mountains and in Segment 3 near Lebec. |
| *Chaetura vauxi* | Vaux's swift | - / CSC (nesting) / - | Nests in coniferous or mixed hardwood forest and forages in forest openings, especially above streams and in old growth stands in hollow trees and snags. This species is a summer resident in California. The alignment is located south of the known breeding range. | Likely to occur as a transient on the west side of Castac Lake in Segment 3 but does not nest within the GKR Project alignment. | One individual was observed in Segment 3 while foraging with a mixed flock of swallows on the west side of Castac Lake. There are seven eBird records in the vicinity of the alignment, including in the Kern River canyon, the western foothills of the Tehachapi Mountains, Brite Lake, Lebec, and Quail Lake; none of these are nesting records. |
| *Circus hudsonius* | northern harrier | - / CSC (nesting) / - | Inhabits and nests in freshwater and coastal salt marshes, as well as grasslands and open scrub habitats. The northern harrier breeds throughout North America and Eurasia. In the Central Valley, northern harrier nesting generally occurs below 5,700 ft amsl. | Likely to occur within the GKR Project alignment for brief periods while hunting, especially in Segments 1, 2, and 3. There are no nesting records within the alignment area, suggesting this species does not nest within the GKR Project alignment. | One northern harrier was observed foraging in Segment 3 west of Castac Lake. There are no CNDDB occurrences of the northern harrier near the alignment. There are at least 15 eBird records for the species in the Kern River drainage, Cottonwood Creek, Caliente Creek, western foothills of the Tehachapi Mountains, southern San Joaquin Valley, Fort Tejon State Historic Park, Lebec, and Gorman; none of these observations represented nesting records for this species. |
| *Lanius ludovicianus* | loggerhead shrike | - / CSC (nesting) / - | Occurs in open woodlands, savannas, shrublands, and agricultural fields with sufficient shrubs, trees, posts, fencelines, or other perches. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs for nesting. Portions of the alignment occur within the | Likely to forage within portions of the GKR Project alignment and could nest within the alignment in shrublands and woodlands that provide suitable nesting sites with dense woody foliage. | Loggerhead shrikes were observed foraging in agricultural fields, grasslands, shrublands, and woodlands in Segments 2, 4, and east of the Gorman Substation. No CNDDB occurrences have been reported within the GKR Project alignment but there are over 20 eBird observations in all segments. |

**Table 5.4-5. Special-status Wildlife Species Observed within the GKR Project Alignment**

| Scientific Name | Common Name | Regulatory Status (Federal/California /USFS) | Habitat in California | Potential to Occur within GKR Project Alignment | Documentation of Species within GKR Project Alignment |
|---|---|---|---|---|---|
| | | | breeding range of the loggerhead shrike. | | |
| *Pooecetes gramineus affinis* | Oregon vesper sparrow | - / CSC (wintering) / - | Occupies grassland vegetation, including moist meadows and grassland stubble, open shrublands with expanses of grasses between shrubs, and weedy agricultural fields. This species is a winter resident of California in lowlands south of San Francisco Bay and west of the Sierra Nevada. The alignment occurs south of the breeding range of the Oregon vesper sparrow. | Likely to occur in Segments 1 and 2 within the GKR Project alignment in suitable wintering habitat but does not nest within the alignment. | An adult Oregon vesper sparrow was observed in Segment 2 southeast of Grapevine at the base of the Tehachapi Mountains. There are no recorded CNDDB occurrences for this species within the GKR Project alignment. There are several eBird records for the vesper sparrow in the GKR Project region, including near Cottonwood Creek, but eBird does not separate vesper sparrow observations by subspecies. |
| *Progne subis* | purple martin | - / CSC (nesting) / - | Occurs primarily above 4,000 ft amsl in the Tehachapi Mountains in open oak woodland vegetation, although nests have been reported as low as 3,166 ft amsl. Purple martins are primarily summer residents and migrants in Kern County. | Likely to forage in Segments 2 and 4 in the Tehachapi Mountains between Arvin and Stallion Springs; however, it is unlikely to nest within the alignment, based on lack of nesting records within the alignment. | One purple martin was observed in Segment 4 on a power line 2.4 miles southeast of Power Line Road in Arvin; this location occurs in the Tehachapi Mountains. There are records of nesting purple martins in old woodpecker cavities in oak woodlands in the Tehachapi Mountains; the lowest elevation for nesting purple martins on Tejon Ranch 3,166 ft amsl (Shuford and Gardali 2008, White et al. 2011). The nearest purple martin nest to the GKR Project alignment was reported less than one mile east of Segment 2 at 4,800 ft amsl by Grapevine Peak; the elevation of the GKR Project alignment in this area is below 3,000 ft amsl. CNDDB records within 5 miles of the GKR Project alignment occur east of Segment 2 and south of Comanche Point. |
| *Setophaga petechia* | yellow warbler | - / CSC (nesting) / - | Forages in shrubby thickets and woodlands, particularly along watercourses and in wetlands where they commonly frequent trees including willows, alders, and cottonwoods up to elevations of 9,000 ft amsl in California, where it may nest. Portions of the alignment | Likely to occur in Segment 3 while foraging but is unlikely to nest within the GKR Project alignment. | One observation of an adult foraging in Segment 3 on the west side of Castac Lake. There are no CNDDB records within the alignment. There are no eBird nesting observations within the alignment. |

**Table 5.4-5. Special-status Wildlife Species Observed within the GKR Project Alignment**

| Scientific Name | Common Name | Regulatory Status (Federal/California /USFS) | Habitat in California | Potential to Occur within GKR Project Alignment | Documentation of Species within GKR Project Alignment |
|---|---|---|---|---|---|
| | | | occur within the breeding range of the yellow warbler. | | |
| ***Mammals*** | | | | | |
| *Taxidea taxus* | American badger | - / CSC / - | Occurs in dry, open stages of shrub, forest, and herbaceous communities and requires sufficient food, friable soils, and open, uncultivated landscapes. The species is widely distributed in North America. | Likely to occur in Segment 1 in the foothills of the Sierra Nevada between the existing Kern River 1 Hydroelectric Substation and Highway 58 and in Segment 3, where it could have natal dens. It is unlikely to have a natal den in other potentially suitable habitat in the Tehachapi Mountains in Segment 2, but may be present. | Three active American badger dens were observed; one in Segment 1 and two in Segment 3. CNDDB records for the American badger near the GKR Project alignment are concentrated in Segment 2. |
| *Vulpes macrotis mutica* | San Joaquin kit fox | FE / CT / - | Occupies grasslands and grassy open shrublands in the western and southern San Joaquin Valley and associated foothills. Requires a suitable prey base, such as black-tailed jackrabbits and desert cottontails, rodents (especially kangaroo rats and ground squirrels), insects, reptiles, and some birds and bird eggs. | Likely to occur in Segment 2 and potentially present in Segments 1 and 4 in suitable habitat while hunting and roaming in and near the San Joaquin Valley and associated foothills of the southern Sierra Nevada and the margins of the Tehachapi Mountains. Likely to maintain an active kit fox burrow in Segment 2 at the base of the Tehachapi Mountains near Comanche Point; the San Joaquin kit fox is unlikely to establish an active den within other locations in Segments 1, 2, and 4 in low-elevation habitat within the San Joaquin Valley and nearby foothills of the southern Sierra Nevada and Tehachapi Mountains. | One potential active burrow in Segment 2 at the base of the western foothills of the Tehachapi Mountains just north of Comanche Point and south of Arvin. Three CNDDB occurrences recorded in the past 10 years have been reported in the western foothills of the Tehachapi Mountains to the north and south of the potential kit fox burrow location described above and additional records within 5 miles of the GKR Project alignment occur near Segments 1, 2, and 4 within the San Joaquin Valley and associated foothills. |
| ***Invertebrates*** | | | | | |
| *Danaus plexippus plexippus* | *monarch butterfly* | FC- / - / USFS S | Suitable habitat for the monarch butterfly includes *Eucalyptus* and some other roost trees in a particular configuration that enables the monarch butterflies to cluster and | Suitable roost sites for the monarch butterfly are absent within the GKR alignment, but the monarch butterfly may pass through the area in search of milkweed. The monarch butterfly | One individual was observed in the southern portion of Segment 2 north of the mouth of Grapevine Canyon. No milkweed was present in this location. Four CNDDB observations of monarch butterflies were reported during the |

**Table 5.4-5. Special-status Wildlife Species Observed within the GKR Project Alignment**

| Scientific Name | Common Name | Regulatory Status (Federal/California /USFS) | Habitat in California | Potential to Occur within GKR Project Alignment | Documentation of Species within GKR Project Alignment |
|---|---|---|---|---|---|
| | | | remain warm through the winter months, with a nearby source of nectar. Milkweed plants (*Asclepias*) are the primary food source of the caterpillars. | does not currently overwinter within the GKR alignment. | winter months over 30 years ago between 3 and 10 miles west of the GKR Project alignment along the Kern River and in Bakersfield. A 1985 observation (Occurrence #199) of adult monarch butterflies trees was reported in Jefferson Park in Bakersfield; subsequent searches for overwintering monarch butterflies in this location have been negative. A 1985 observation (Occurrence #200) of adult monarch butterflies in a *Eucalyptu*s tree above the Kern River floodplain was reported in the College Heights neighborhood in Bakersfield; subsequent searches for overwintering monarch butterflies in this location have been negative, and a 1990 survey reported that “no suitable habitat for a roosting site was found.” A 1985 observation (Occurrence #201) of “tens” of adult monarch butterflies was reported near the lake at Hart Memorial Park with the note “site used for overwintering, but no clustering phenomenon akin to Mexico or coastal California have been observed”; subsequent searches for overwintering monarch butterflies in this location have been negative and the site is described as deteriorated or eliminated due to tree cutting by the park. A 1985 observation (Occurrence #202) of “tens” of adult monarch butterflies was reported near Lake Ming with the note “site used for overwintering, but no clustering phenomenon akin to Mexico or coastal California have been observed;” subsequent searches for overwintering monarch butterflies in this location have been negative and the site is described as deteriorated or eliminated due to tree cutting by the park. |

**Status Codes**

**United States Fish and Wildlife Service (USFWS)**
FE Federal Endangered
FC Federal Candidate for listing

**California Department of Fish and Wildlife (CDFW)**
CE California Endangered
CT California Threatened
CR California Rare

**United States Forest Service (USFS)**
USFS S USFS Sensitive Species

**Table 5.4-6. Special-status Wildlife Species Not Observed along the GKR Project Alignment, but Reported in CNDDB for Surrounding Area**

| Scientific Name | Common Name | Regulatory Status (Federal/ California /USFS) | Habitat in California | Potential to Occur within GKR Project Alignment | Documentation of Species within GKR Project Alignment |
|---|---|---|---|---|---|
| ***Amphibians*** | | | | | |
| *Batrachoseps relictus* | relictual slender salamander | - / CSC / USFS S | The relictual slender salamander occurs near surface water and in rocky areas with springs and minimal cover by oaks, pines, buckeyes, and sycamores. The northern terminus of the alignment in the Kern River Canyon is within the historical range of the relictual slender salamander. | The relictual slender salamander does not occur within the GKR Project alignment; it is extirpated from all portions of its historical range except at Breckenridge Mountain in the southern Sierra Nevada east of the GKR Project alignment. | A 2017 CNDDB record was reported at a seep on Breckenridge Mountain more than 5 miles east of the GKR Project alignment, and a second 2017 record was reported near headwater seepage at Lucas Creek on Breckenridge Mountain between 5,462 and 5,577 ft amsl. |
| *Batrachoseps simatus* | Kern Canyon slender salamander | - / CT / USFS S | The Kern Canyon slender salamander occurs under rocks and logs or in moist litter in narrow to open canyons shaded with Fremont cottonwood, California sycamore, and species of willows and on north-facing slopes supporting woodlands dominated by California buckeye, interior live oak, canyon live oak, and gray pine. | The Kern Canyon slender salamander does not occur within the GKR Project alignment; the range for the Kern Canyon slender salamander occurs outside of the GKR Project alignment. | No CNDDB records occur within the GKR Project alignment. The nearest CNDDB record was reported more than 3 miles up-river to the northeast of the alignment and the existing Kern River 1 Hydroelectric Substation at the confluence of Stark Creek and the Kern River at 1,515 ft amsl. |
| *Batrachoseps stebbinsi* | Tehachapi slender salamander | - / CT / - | The Tehachapi slender salamander occurs in small, localized populations in moist canyons and on north-facing slopes supporting woodlands and forests near and above streambanks and washes that are seasonally shaded; common overstory tree species include California buckeye, canyon live oak, interior live oak, blue oak, and valley oak. In Caliente Creek, it has also been observed in habitat supporting | The Tehachapi slender salamander is likely to occur within the GKR Project alignment in Segment 2 near Grapevine Creek and in Fort Tejon State Historic Park in moist shaded woodlands and canyon bottoms above 3,100 ft amsl. | A 2009 record was reported approximately 0.02 miles northeast of Segment 2 at 2,700 ft amsl along Grapevine Creek. A 1989 CNDDB record was reported within 0.1 mile east of Segment 2 at Fort Tejon State Historic Park at 3,350 ft amsl. A 1990 record was reported 0.5 miles southeast of Segment 2 and west of in Johnson Canyon at 3,450 ft amsl. |

Table 5.4-6. Special-status Wildlife Species Not Observed along the GKR Project Alignment, but Reported in CNDDB for Surrounding Area

| Scientific Name | Common Name | Regulatory Status (Federal/ California /USFS) | Habitat in California | Potential to Occur within GKR Project Alignment | Documentation of Species within GKR Project Alignment |
|---|---|---|---|---|---|
| | | | California juniper, yucca, and other shrubs. | | |
| *Ensatina eschscholtzii croceater* | yellow-blotched salamander | - / WL / USFS S | The yellow-blotched salamander occurs in evergreen and deciduous forests, under rocks, logs, and other surface debris, especially on shaded north-facing areas near creeks or streams. Portions of the GKR Project alignment are within the breeding range of the yellow-blotched salamander. | Yellow-blotched salamander is likely to occur within the GKR Project alignment in Segments 2 and 3 between Fort Tejon State Historic Park and Gorman. | Two CNDDB records were reported on or near Segment 2 in the Castac Valley near or at Fort Tejon State Historic Park; a 2001 record overlaps the alignment and a 1989 record was reported nearby. A 2004 record was reported approximately 0.8 miles east of Segment 3 to the east of Crane Valley. |
| *Rana boylii* | foothill yellow-legged frog | - / CT Candidate, CSC / USFS S | The foothill yellow-legged frog lays eggs in streams and rivers that are often wide and sun-lit and near water bars or pool edges. This species overwinters in smaller perennial tributaries and streams or in riparian habitat, often with woody debris or marsh vegetation. | The foothill yellow-legged frog does not occur within the GKR Project alignment, based on the absence of observations within 3 miles of the GKR Project alignment during the past 80 years. | A 1940 CNDDB record was reported more than 3 miles upstream of Segment 1 and east of the existing Kern River 1 Hydroelectric Substation. A 1959 record was reported from Tehachapi Creek approximately 4.7 miles east of the alignment. An 1875 record was reported approximately 4.5 miles west of the GKR Project alignment in Tejon Creek. This species is believed to have been extirpated from these locations. |
| ***Reptiles*** | | | | | |
| *Anniella* sp. | California legless lizard | - / CSC / - | California legless lizards occur in desert canyons and springs along the western edge of the Mojave Desert in Kern County. | The California legless lizard is unlikely to be present but may potentially occur within the GKR Project alignment between Fort Tejon State Historic Park and Gorman, although there are no current records for this species. | CNDDB records more than 75 years old have been reported near Segment 1 on the north side of the Kern River and near Segment 2 northeast of Wheeler Ridge in what is now active agricultural land and at Fort Tejon State Historic Park. A 2012 CNDDB record was reported east of the GKR Project alignment and west of the Bailey Substation. |
| *Anniella grinnelli* | Bakersfield legless lizard | - / CSC / - | The Bakersfield legless lizard occurs primarily in areas with moist, sandy or loose loamy soils such as under sparse vegetation in shrublands, oak woodland, and riparian habitats. | The Bakersfield legless lizard is likely to occur in Segment 1 in moist, loose soils with leaf litter and debris near streams in one location, near or in Caliente Creek. | A 2007 CNDDB record was reported approximately 0.2 miles east of Segment 1 in Caliente Creek in the Sand Ridge Preserve. A 2016 record was reported approximately 4.2 miles east of the alignment along Bena Road where it crosses Caliente Creek. A 2017 record was reported approximately 4.7 miles southwest of the alignment along Tejon Creek in the foothills of the western Tehachapi Mountains. |

**Table 5.4-6. Special-status Wildlife Species Not Observed along the GKR Project Alignment, but Reported in CNDDB for Surrounding Area**

| Scientific Name | Common Name | Regulatory Status (Federal/ California /USFS) | Habitat in California | Potential to Occur within GKR Project Alignment | Documentation of Species within GKR Project Alignment |
|---|---|---|---|---|---|
| *Arizona elegans occidentalis* | California glossy snake | - / CSC / - | The California glossy snake occurs in scrub and grassland habitats, often with loose or sandy soils. | The California glossy snake is unlikely to occur within the GKR Project alignment; it could be present in Segment 1 but does not occur elsewhere within the GKR Project alignment, based on the absence of recent records that overlap the alignment. | A 2013 CNDDB record was reported approximately 2.9 miles east of Segment 1 along Bena Road in the Sierra Nevada foothills. All other records within 5 miles of the alignment are more than 70 years old: a 1946 record was reported approximately 0.3 miles west of Segment 2 in the vicinity of Grapevine, and a 1939 record of a roadkill was reported approximately 0.6 miles south of Segment 3, 3 miles southeast of Gorman. |
| *Aspidoscelis tigris stejnegeri* | coastal whiptail | '- / CSC / - | Coastal whiptails occur from coastal southern California to Baja California in desert to semi-arid areas with sparse vegetation – including chaparral, woodland, and riparian habitats. | The coastal whiptail is unlikely to occur within the GKR Project alignment; it could be present in Segment 3 but does not occur elsewhere within the GKR Project alignment, based on the absence of recent records that overlap the alignment. | The northernmost CNDDB record for this species was an adult reported within the GKR Project alignment in a mix of grassland and Rubber Rabbitbrush Scrub; this 2004 record was reported approximately less than two miles east of the Gorman Substation at the base of the Tehachapi Mountains. |
| *Charina umbratica* | southern rubber boa | - / CT / USFS S | The southern rubber boa occurs in oak woodlands and conifer forests between 5,000 and 8,200 ft amsl amongst rocks and under logs and other debris and tends to occupy areas with moist soils, and hibernates below the frost line. | The southern rubber boa does not occur within the GKR Project alignment. The alignment lies below the minimum elevation for the southern rubber boa (5,000 ft amsl) and occurs outside the range of this species. | The nearest CNDDB records to the alignment were reported more than 8 miles west of the alignment near Lake of the Woods. |
| *Diadophis punctatus modestus* | San Bernardino ringneck snake | - / - / USFS S | The San Bernardino ringneck snake occurs in annual grasslands, rocky areas within valley-foothill, mix coniferous forests, chaparral and moist habitats. The San Bernardino ringneck snake is a subspecies of the ringneck snake (*Diadophis punctatus*) that is endemic to California. | The San Bernardino ringneck snake is unlikely to occur but could be present in Segment 2 east of Fort Tejon State Historic Park. | A 2000 CNDDB record was reported 2.5 miles northeast of Segment 2 in Live Oak Canyon under blue and black oak trees, herbaceous species, and debris in the Tehachapi Mountains east of Fort Tejon State Historic Park |
| *Emys marmorata* | western pond turtle | - / CSC / USFS S | The western pond turtle occurs in permanent or nearly permanent water in a wide variety of habitats from sea level to 4,200 ft amsl. They require basking sites such as | The western pond turtle is unlikely to occur within the GKR Project alignment as this species is highly aquatic, the locations where the alignment crosses potentially suitable | Two undated CNDDB records were reported 0.7 miles west of Segment 1 at Cottonwood Creek and approximately 0.1 miles north of the alignment at the mouth of the Kern River Canyon. An undated CNDDB record was reported approximately 0.3 |

**Table 5.4-6. Special-status Wildlife Species Not Observed along the GKR Project Alignment, but Reported in CNDDB for Surrounding Area**

| Scientific Name | Common Name | Regulatory Status (Federal/ California /USFS) | Habitat in California | Potential to Occur within GKR Project Alignment | Documentation of Species within GKR Project Alignment |
|---|---|---|---|---|---|
| | | | partially submerged logs, rocks, mats of floating vegetation, or open mud banks. | aquatic habitat for the western pond turtle are limited, and there are no recent observations of this species within the alignment. | miles south of the alignment at Fort Tejon State Historic Park near Segment 2. |
| *Gambelia sila* | blunt-nosed leopard lizard | FE / CE, FP / - | The blunt-nosed leopard lizard uses rodent burrows for shelter and occurs in sparse vegetation in grassland and low scrub habitat with low topographic relief, often along washes and drainages in well-drained soils. The GKR Project alignment lies within the breeding range of the blunt-nosed leopard lizard between the existing Kern River 1 Hydroelectric Substation to just south of Grapevine. | The blunt-nosed leopard lizard is likely to occur in two areas within the GKR Project alignment: where the alignment crosses annual grassland and open scrub habitat in the San Joaquin Valley and nearby foothills of the Tehachapi Mountains north and south of Comanche Point in Segments 1, 2, and 4 and near the California Aqueduct between Wheeler Ridge and Grapevine in Segment 2. | In Segment 1, a 1990 CNDDB observation that includes egg records touches the alignment east of Arvin. Near “the T” where Segments 1 and 2 intersect southeast of Arvin at the mouth of Little Sycamore Canyon, there are both older and more recent (2011-2016) observations that overlap the alignment or occur within 0.7 mile. Additional records in Segment 2 were reported near the California Aqueduct between Wheeler Ridge and Grapevine almost 30 years ago, and an 1863 observation was reported from Grapevine Canyon. |
| *Masticophis* (*Coluber*) *flagellum ruddocki* | San Joaquin coachwhip | - / CSC / - | The San Joaquin coachwhip occurs in open, dry, treeless areas with little or no cover, including valley grassland and saltbush scrub and avoids dense vegetation. Portions of the alignment are within the breeding range of this species. | The San Joaquin coachwhip is likely to occur in or near Segment 2 on the south side of Tejon Creek in the western Tehachapi Mountains. | A 2012 CNDDB record was reported approximately 1.4 miles west of Segment 2 on the south side of Tejon Creek in the western Tehachapi Mountains. Another 2012 record was reported approximately 4.0 miles southwest of the alignment near Chanac Creek in the Tehachapi Mountains. A 2010 CNDDB record was reported approximately 3.3 miles west of the alignment, 2.2 miles southwest of Wheeler Ridge in the Wind Wolves Preserve. |
| *Phrynosoma blainvillii* | coast horned lizard | - / CSC / - | The coast horned lizard occurs in sandy washes and friable soils in areas with scattered low shrubs in a variety of vegetation types, including grasslands, shrublands, and woodlands in the Sierra Nevada foothills from Butte County to Kern County, in the Tehachapi Mountains | The coast horned lizard is likely to occur within the GKR Project alignment in Segment 3 on the slopes of the Tehachapi Mountains between Castac Lake and the Gorman Substation. | A 2010 record was reported 0.1 miles east of Segment 3 at the top of the ridge of the Tehachapi Mountains between Castac Lake and the Gorman Substation. |

**Table 5.4-6. Special-status Wildlife Species Not Observed along the GKR Project Alignment, but Reported in CNDDB for Surrounding Area**

| Scientific Name | Common Name | Regulatory Status (Federal/ California /USFS) | Habitat in California | Potential to Occur within GKR Project Alignment | Documentation of Species within GKR Project Alignment |
|---|---|---|---|---|---|
| *Thamnophis hammondii* | two-striped garter snake | - / CSC / USFS S | This species is aquatic, found in or near permanent fresh water, and often along streams in freshwater marsh, wetlands, and riparian scrub and forest habitats. | The two-striped garter snake is unlikely to occur in the aquatic habitat in Segment 3 near the Gorman Substation of the GKR Project alignment, and there are no recent observations in the area. | A 1983 CNDDB occurrence was reported approximately 0.5 miles southeast of the Gorman Substation in Segment 3. Another 1983 occurrence was reported approximately 1.6 miles west of Segment 3 and west of the Gorman Substation. |
| *Xantusia vigilis sierrae* | Sierra night lizard | - / CSC / USFS S | The Sierra night lizard inhabits rocky outcrops in a small portion of the Greenhorn Mountains within the southern Sierra Nevada in open grassland with scattered oak woodland, gray pine, and low shrubs. | The Sierra night lizard does not occur within the GKR Project alignment; its range is north of the Kern River canyon at higher elevations than the alignment. | All CNDDB records are at higher elevations on the north side of the Kern River near the Kern River Hydro Generation Facility. A 2008 CNDDB record was reported approximately 2.3 miles north of the Kern River Hydro Generation Facility. Two records recorded more than 30 years ago were reported approximately 2.5 miles west and northwest of the Kern River Hydro Generation Facility. |
| ***Birds*** | | | | | |
| *Asio otus* | long-eared owl | - / CSC (nesting) / - | The long-eared owl occurs in dense tree stands for roosting and nesting such as riparian forests and hunts in grasslands and open shrublands and coniferous and deciduous woodlands. | The long-eared owl is unlikely to forage within the GKR Project alignment in Segments 2 and 3 in the western Tehachapi Mountains north and south of Comanche Point. It does not nest within the alignment, due to lack of suitable riparian habitat or other dense stands of trees near observations of this species. | All CNDDB observations near the GKR Project alignment are confined to Segments 2 and 3 in the western Tehachapi Mountains north and south of Comanche Point.<br><br>A 1974 nesting CNDDB record was reported approximately 1.4 miles west of Segment 1 in the town of Arvin. A 1992 nesting record was reported 1.6 miles east of Segment 2 on the south side of Tejon Creek on the west edge of the Tehachapi Mountains. A 2015 eBird observation was reported from Tejon Creek more than 5 miles from the alignment; the observation of three individuals suggests it may have been a nesting observation. |
| *Buteo swainsoni* | Swainson's hawk | - / CT (nesting) / - | Swainson’s hawks forage in grasslands with scattered trees, riparian areas, savannas, and agricultural or ranch lands with groves or lines of trees adjacent to suitable foraging areas such as grasslands or alfalfa or grain fields | The Swainson’s hawk is likely to forage within the GKR Project alignment on an occasional basis during spring and summer months; it is unlikely to nest within the alignment, based on the lack of | No CNDDB occurrences have been reported within the alignment. There are numerous eBird records for the Swainson’s hawk within the GKR Project area, including by the Kern River and in agricultural fields north and south of California Highway 58 in Segment 1; near the California Aqueduct, at Grapevine, in Grapevine Canyon, at |

**Table 5.4-6. Special-status Wildlife Species Not Observed along the GKR Project Alignment, but Reported in CNDDB for Surrounding Area**

| Scientific Name | Common Name | Regulatory Status (Federal/ California /USFS) | Habitat in California | Potential to Occur within GKR Project Alignment | Documentation of Species within GKR Project Alignment |
|---|---|---|---|---|---|
| | | | that support rodent populations. Nests are generally located in solitary trees or in a small grove of trees along a stream or field. | nesting records within 5 miles of the alignment. | Fort Tejon State Historic Park, near Lebec, and near Gorman in Segments 2 and 3; at the Stallion Springs Golf Course in Segment 5; and at Brite Lake to the east of the Banducci Substation. |
| *Dendragapus fuliginosus howardi* | Mount Pinos sooty grouse | - / CSC / - | The Mount Pinos sooty grouse occurs in montane coniferous forests that support white fir and other conifers at or above 7,500 ft amsl. | The Mount Pinos sooty grouse does not occur within the GKR Project alignment; suitable habitat and elevations for this species are absent within the alignment. | The two CNDDB records were reported more than 7 miles west of Segment 3 in the vicinity of Frazier Mountain and Mount Pinos. |
| *Gymnogyps californianus* | California condor | FE / CE, FP / - | The California condor requires large areas of open foothill grassland, oak savannas and woodlands, rocky shrublands, and coniferous forests below 9,000 ft amsl. Roosting sites are generally located near foraging and nesting areas. California condors usually nest in caves or on ledges on steep cliffs. | The California condor is likely to forage along the GKR Project alignment in Segments 1, 2, and 4; however, it does not roost or nest within 2.5 miles of the alignment. | Non-roosting California condor observations have been reported in CNDDB and eBird in Segment 1 near the Kern River, and in Segments 2 and 4 in the Tehachapi Mountains. |
| *Haliaeetus leucocephalus* | bald eagle | FD / CE, FP (nesting & wintering) / USFS S | Bald eagles occur along ocean shores, lake margins, and rivers for both nesting and wintering, constructing a stick nest in large, old-growth mostly evergreen trees with open branches, especially ponderosa pine; they also nest on cliff faces. The GKR Project alignment is outside of the breeding range of the bald eagle; there are no nesting records within or near the GKR Project alignment. | The bald eagle is likely to forage within the GKR Project alignment on an occasional basis in areas near water but does not nest within the alignment; there are no nesting records for this species in the GKR Project area. Suitable wintering habitat within the GKR Project alignment is present in Segment 2 between the California Aqueduct and Grapevine Canyon. Potentially suitable wintering habitat may be present in the Kern River Canyon, at Brite Lake, and at Castac Lake. | A 2001 CNDDB record overlaps Segment 2 near the California Aqueduct, where a bald eagle was observed on the north side of Edmonston Pumping Plant Road east of Interstate 5; this record includes wintering observations. Another individual was observed further east in February 2000 in Segment 2 between Edmonson Pumping Plant Road and the California Aqueduct. |
| *Vireo bellii pusillus* | least Bell's vireo | FE / CE (nesting) / - | The least Bell’s vireo occurs as a summer resident of southern California in willow riparian areas below 2,000 ft amsl. Nests are placed along margins of bushes or | The least Bell’s vireo does not nest within the GKR Project alignment, based on the lack of recent observations and fragmentation and | A single 1973 CNDDB observation of a potentially nesting, singing male Bell’s vireo was reported from Arvin, approximately 0.5 mile west of Segment 1; this location previously supported other nesting individuals, but the decline of least |

Table 5.4-6. Special-status Wildlife Species Not Observed along the GKR Project Alignment, but Reported in CNDDB for Surrounding Area

| Scientific Name | Common Name | Regulatory Status (Federal/ California /USFS) | Habitat in California | Potential to Occur within GKR Project Alignment | Documentation of Species within GKR Project Alignment |
|---|---|---|---|---|---|
| | | | on twigs projecting into pathways, usually willow, mulefat, and mesquite. Portions of the alignment occur within the historical breeding range of the least Bell's vireo but outside of critical habitat for this species. | disturbance of riparian habitat within the alignment. | Bell's vireos near Arvin has been attributed to brood parasitism by the brown-headed cowbird (*Molothrus ate*). |
| ***Mammals*** | | | | | |
| *Ammospermophilus nelsoni* | Nelson's antelope squirrel | - / CT / - | The Nelson's antelope squirrel occurs in grasslands, open shrublands, and alkali sink vegetation where there are widely scattered shrubs, forbs, and grasses in areas with gullies and washes. | The Nelson's antelope squirrel is unlikely to occur within the GKR Project alignment in Segment 2 in uncultivated grasslands and low shrublands between the California Aqueduct east of Wheeler Ridge south to Grapevine. | The only CNDDB records near the GKR Project alignment are over 100 years old. Two 1903 CNDDB records were reported 0.24 miles northwest of Segment 2 at Rose Station along the California Aqueduct just north of Grapevine. A 1911 record was generally reported approximately 5 miles west of Segment 1 and was mapped about 8 miles northeast of Bakersfield in the vicinity of the Kern River in Hart Memorial Park. |
| *Antrozous pallidus* | pallid bat | - / CSC / USFS S | The pallid bat occurs in desert, grassland, shrubland, woodland and forest communities with rocky areas for roosting. | The pallid bat is likely to forage within the GKR Project alignment but is unlikely to roost within the alignment. There have been no overlapping roosting records within the alignment in the past 74 years. | A 1903 CNDDB record generally overlaps Segment 2 at Fort Tejon State Historic Park. A 1945 record was reported in an area broadly overlapping Segments 2 and 3 near Lebec. A 1998 CNDDB record was reported approximately 2.9 miles east of Segment 2 and represented a group of 20 bats roosting on a railroad trellis over Caliente Creek. |
| *Corynorhinus townsendii* | Townsend's big-eared bat | - / CSC / USFS S | Townsend's big-eared bats roosts in mines or caves in the winter and limestone caves, lava tubes, and human-made structures in the summer. Maternity colonies form between March and June. Foraging occurs near roosting habitat in arid desert scrub and pine forests. | The Townsend's big-eared bat is likely to occur within the GKR Project alignment while foraging or during dispersal but is unlikely to roost within the alignment based on the absence of suitable roosting sites or observations in the past 74 years. | A 1945 CNDDB record was reported in an area broadly overlapping Segments 2 and 3 near Lebec on the west side of Interstate 5, near the intersection of Lebec Road and Ridge Route Drive. A 1938 record was reported 4.5 miles west of the alignment at "Frazier Mountain Park." |
| *Dipodomys nitratoides nitratoides* | Tipton kangaroo rat | FE / CE / - | The Tipton kangaroo rat occurs in grassland vegetation as well as valley scrub communities and | The Tipton kangaroo rat is likely to occur in two limited areas within the GKR Project alignment: in Segment 1 | A 1903 CNDDB record overlaps the Segment 2 approximately 1.5 miles north of Grapevine at Rose Station, Fort Tejon. A 1976 record was |

**Table 5.4-6. Special-status Wildlife Species Not Observed along the GKR Project Alignment, but Reported in CNDDB for Surrounding Area**

| Scientific Name | Common Name | Regulatory Status (Federal/ California /USFS) | Habitat in California | Potential to Occur within GKR Project Alignment | Documentation of Species within GKR Project Alignment |
|---|---|---|---|---|---|
| | | | require soft friable soils in areas not subject to seasonal flooding. The alignment lies within the breeding range of the Tipton kangaroo rat between the San Joaquin Valley east of Bakersfield and Edison south to Grapevine; however, the areas supporting current populations of this species do not overlap the alignment. | south of the foothills of the southern Sierra Nevada, where it was observed 20 years ago, as well as in grasslands and fallow agricultural land east of Wheeler Ridge south to Grapevine in Segment 2. Although the observations at the southern end of the San Joaquin Valley near Grapevine are more than 40 years old, conditions remain within 3 miles that could support this species. | reported further west of Segment 2, 1.5 miles west of Mettler. A 1999 record was reported less than 1 mile west of Segment 1 approximately 1.5 miles east of the town of Edison and west of Bena. |
| *Myotis thysanodes* | fringed myotis | - / - / USFS S | Roosting sites for the fringed myotis consist primarily of abandoned mines, but may include tree snags, rock outcrops, and natural caves; this species forages in shrublands to coniferous forest vegetation. | The fringed myotis may occur while foraging within the GKR Project alignment but is unlikely to roost within the alignment. | A 1945 record was reported in an area broadly overlapping Segments 2 and 3 near Lebec. |
| *Onychomys torridus tularensis* | Tulare grasshopper mouse | - / CSC / - | The Tulare grasshopper mouse occurs in arid valleys and scrub in the southern San Joaquin Valley and forage almost exclusively for arthropods. | The Tulare grasshopper mouse is unlikely to occur within the GKR Project alignment in Segment 1 along Caliente Creek and does not occur elsewhere within the alignment, based upon the absence of recent CNDDB records. | Two 1918 CNDDB records were reported from Caliente Wash north of Arvin. One record was reported as broadly overlapping Segment 1 where it crosses Caliente Creek. Another record was reported further north in the same wash about 1.2 miles east of Segment 1. A 1973 record was reported 3.6 miles east of the Highwind Substation at Cameron. |

**Table 5.4-6. Special-status Wildlife Species Not Observed along the GKR Project Alignment, but Reported in CNDDB for Surrounding Area**

| Scientific Name | Common Name | Regulatory Status (Federal/ California /USFS) | Habitat in California | Potential to Occur within GKR Project Alignment | Documentation of Species within GKR Project Alignment |
|---|---|---|---|---|---|
| *Perognathus alticola inexpectatus* | Tehachapi pocket mouse | - / CSC / USFS S | The Tehachapi pocket mouse inhabits grasslands and open shrublands and woodlands in loose sandy soils between 3,500 and 6,000 ft amsl in the Tehachapi Mountains. They use burrows for cover and nesting and aestivate during extreme weather. | The Tehachapi pocket mouse is unlikely to occur but may be present in Segment 3 near the Gorman Substation; all CNDDB records that overlap the GKR Project alignment are more than 40 years old. | There are three CNDDB records that overlap the alignment near the Gorman Substation in Segment 3. These records are all more than 40 years old. A 1941 record (Occurrence #8) overlaps Segment 3 near the Gorman Substation. A 1974 record was reported 1.5 miles west of Segment 3 and west of the Gorman Substation. A 1952 record (Occurrence #7) overlaps the alignment just east of the Gorman Substation. Two more recent records (2003, 2006) for the species occur at higher elevations in the Tehachapi Mountains to the east of Lebec and northeast of Gorman in more remote locations. Additional records occur in the Tehachapi Valley east of the Banducci Substation. |
| ***Invertebrates*** | | | | | |
| *Andrena macswaini* | An andrenid bee | - / S2 / - | This bee species occurs in a few locations on the west- and south-facing slopes of the Sierra Nevada foothills from Madera County south to Kern County. It nests in deep sandy soils. | This andrenid bee is unlikely to occur within the GKR Project alignment but may be present in Segment 1 in locations where there are deep sandy soils and *Camissonia* shrublands in the foothills of the southern Sierra Nevada. | A single 1960 CNDDB record was reported 2.6 miles east of Segment 1 in the foothills of the southern Sierra Nevada. |
| *Bombus caliginosus* | obscure bumble bee | - / S1S2 / - | The obscure bumble bee occurs in grasslands and shrublands from northern Washington to southern California. | The obscure bumble does not occur within the GKR Project alignment, based on a lack of records closer than 5 miles to the alignment, and the one CNDDB observation is over 30 years old. | A 1988 CNDDB record was reported 5 miles to the west of Lebec in Frazier Park at 4,800 ft amsl. |
| *Bombus crotchii* | Crotch's bumble bee | - / S1S2 / - | The Crotch's bumble bee occurs primarily to the west of the Mojave Desert in open grassland and scrub habitats, this species nests underground and collects pollen from *Asclepias, Chaenactis, Lupinus, Medicago,* | The Crotch's bumble bee is unlikely to occur but may be present within or near the GKR Project alignment in historical locations, including east of the Banducci Substation in the Cummings and Tehachapi Valleys, and in Segment 2 between Grapevine and Fort Tejon State Historic Park. | A 1954 record was reported to the east of the Banducci Substation in the Cummings Valley, and a 1956 record was reported further east in Tehachapi. A 1952 record was reported in Arvin in Segment 2 approximately 0.5 mile west of the alignment. A 1954 record was reported 1.5 miles west of the alignment at Wheeler Ridge in |

**Table 5.4-6. Special-status Wildlife Species Not Observed along the GKR Project Alignment, but Reported in CNDDB for Surrounding Area**

| Scientific Name | Common Name | Regulatory Status (Federal/ California /USFS) | Habitat in California | Potential to Occur within GKR Project Alignment | Documentation of Species within GKR Project Alignment |
|---|---|---|---|---|---|
| | | | *Eschscholzia, Eriogonum, Phacelia*, and *Salvia* species | | Segment 2. A 1975 record overlaps the alignment at Fort Tejon State Historic Park in Segment 2. |
| *Branchinecta conservatio* | conservancy fairy shrimp | FE / S2 / - | The conservancy fairy shrimp inhabits vernal pools. The alignment is outside of the known range of this species. | The conservancy fairy shrimp does not occur within the GKR Project alignment. Potentially suitable vernal pool habitat does not occur in the vicinity of the alignment and the alignment is outside of the known range of this species. | The single CNDDB record within the GKR Project area is thought to have been inaccurately reported in a 1992 thesis. This observation was reported 8 miles west of Segment 3 near the intersection of Lockwood Valley Road and Frazier Mountain Road |
| *Euphilotes battoides comstocki* | Comstock's blue butterfly | - / S2 / - | The Comstock's blue butterfly occurs in grassland vegetation and uses buckwheat (*Eriogonum*) as a pollen source. | The Comstock's blue butterfly is unlikely to occur within the GKR Project alignment in grassland vegetation with scattered buckwheat. | There are only two CNDDB records for the Comstock's blue butterfly, both in Kern County. A 1988 record was reported northeast of the Banducci Substation in Tehachapi. A 1977 record was reported from the Piute Mountains more than 20 miles east of the Kern River Hydro Generating Facility. |
| *Helminthoglypta concolor* | whitefir shoulderband | - / S1S2 / - | The whitefir shoulderband snail is a terrestrial snail found known only from the Tehachapi Mountains in white fir forest beneath decaying bark and logs above 5,289 ft amsl. | The whitefir shoulderband snail does not occur within the GKR Project alignment due to absence of suitable elevations and habitat. | There are four CNDDB records for the whitefir shoulderband snail in the Tehachapi Mountains above 5,289 ft amsl. |
| *Lytta moesta* | moestan blister beetle | - / S2 / - | The moestan blister beetle can be found in grassland and shrubland habitats within the Central Valley and adjacent foothills of the Sierra Nevada | The moestan blister beetle is unlikely to occur in grassland and shrubland vegetation within the GKR Project alignment between Edison and Arvin, where native vegetation is mostly absent. | Two historic CNDDB records occur near Segment 1 in the San Joaquin Valley. An undated record was reported from Edison, and a 1931 record was reported from Arvin. |
| *Lytta morrisoni* | Morrison's blister beetle | - / S1S2 / - | The Morrison's blister beetle occurs in grasslands and shrublands in the Central Valley between San Benito and Kern Counties | The Morrison's blister beetle is unlikely to occur within the GKR Project alignment in grassland and shrubland vegetation near Edison, where native vegetation is mostly absent. | One undated CNDDB record for the Morrison's blister beetle was reported from Edison, 2.8 miles west of Segment 1. |

**Table 5.4-6. Special-status Wildlife Species Not Observed along the GKR Project Alignment, but Reported in CNDDB for Surrounding Area**

| Scientific Name | Common Name | Regulatory Status (Federal/ California /USFS) | Habitat in California | Potential to Occur within GKR Project Alignment | Documentation of Species within GKR Project Alignment |
|---|---|---|---|---|---|
| *Plebulina emigdionis* | San Emigdio blue butterfly | - / S1S2 / USFS S | The San Emigdio blue butterfly occurs in montane desert regions on its host plant four-wing saltbush | The San Emigdio blue butterfly is unlikely to occur within the GKR Project alignment at locations supporting four-wing saltbush between Lebec and the Gorman Substation. | A 1927 record was reported 1.4 miles southwest of the Gorman Substation at 3,875 ft amsl in Frazier Park. An individual was photographed in 2007 near the 1927 location. |
| *Pyrgulopsis greggi* | Kern River pyrg | - / S1 / - | The Kern River pyrg occurs in mud and watercress in Grapevine Creek in Fort Tejon State Historic Park | The Kern River pyrg is unlikely to occur within the GKR Project alignment and is unlikely to occur in Segment 2 in Grapevine Creek as it passes through Fort Tejon State Historic Park; there are no suitable springs within the alignment. | There are two CNDDB records from 1991 that overlaps Segment 2 at Fort Tejon State Historic Park. |
| *Speyeria egleis tehachapina* | Tehachapi Mountain silverspot butterfly | - / S2 / USFS S | The Tehachapi Mountain silverspot butterfly is found between 7,000 and 8,400 ft amsl in the Tehachapi Mountains and Piute Mountains of the southern Sierra Nevada and uses *Viola purpurea* as a larval food source. | The Tehachapi Mountain silverspot butterfly does not occur within the GKR Project alignment; this species occurs at higher elevations than the alignment and requires a larval plant that is not present. | A 1962 record was reported from Tehachapi Mountain at 7,000 ft amsl, more than 7 miles southeast of the Banducci Substation. All other records have been reported in the Piute Mountains. |

**Status Codes**

**United States Fish and Wildlife Service (USFWS)**
FE Federal Endangered

**California Department of Fish and Wildlife (CDFW)**
CE California Endangered
CT California Threatened
CR California Rare
FP Fully Protected

**United States Forest Service (USFS)**
USFS S USFS Sensitive Species

A summary of special-status wildlife reported from the GKR Project alignment is provided below. Details about observed special-status wildlife species, including habitat requirements, species descriptions, and life history, are provided in Appendix C to this PEA document. In addition, the report in Appendix C includes discussions and tables summarizing special-status wildlife species that have the potential to occur within the GKR Project alignment but that were not observed.

###### *5.4.1.5.2.1 Fish*

There are no special-status fish species reported within the GKR Project alignment. The Kern River rainbow trout (*Oncorhynchus mykiss gilberti,* CDFW CSC) is endemic to the upper Kern River and its tributaries from Lake Isabella northwards in the Sierra Nevada to Sequoia National Park, where it occurs in cool, fast-moving streams above 7,000 ft amsl. It does not occur within the GKR Project alignment.

###### *5.4.1.5.2.2 Amphibians*

One special-status amphibian species was observed within the GKR Project area, the western spadefoot, which occurs near ponds and seasonal wetlands in valley and woodland habitats.

The two western spadefoots were located at the grassy edge of a stock pond located in Blue Oak Woodland within 0.01 mile of Segment 4 at 3,200 ft amsl; due to pond water turbidity, tadpoles observed swimming in the pond could not be identified. A 2010 CNDDB occurrence was reported south of Tejon Creek at the western base of the Tehachapi Mountains within 4.8 miles of Segment 2, and a 2013 occurrence was reported 4.5 miles east of Grapevine Canyon near the intersection of Pastoria Creek and Edmonston Pumping Plant Road. The western spadefoot is likely to occur near the stock pond where it was observed in Segment 4, but is unlikely to occur elsewhere within the alignment, based on the general absence of seasonal wetlands and lack of records documenting presence within 3 miles of the GKR Project alignment (CNDDB 2020).

Two other special-status amphibian species have the potential to occur within the GKR Project alignment but were not observed during the special-status wildlife surveys: the Tehachapi slender salamander and yellow-blotched salamander.

The Tehachapi slender salamander (*Batrachoseps stebbinsi*) is a California Threatened species that lives in small, localized populations in moist canyons and on north-facing slopes supporting woodlands and forests near and above streambanks and washes that are seasonally shaded. Portions of Segments 2 and 3 lie within the mapped breeding range of the Tehachapi slender salamander (CDFW 2020c), and there is a 2009 CNDDB record approximately 0.02 miles northeast of Segment 2 at 2,700 ft amsl along Grapevine Creek. Two additional CNDDB records were reported within 0.1 to 0.5 miles of Segment 2 at Fort Tejon State Historic Park. The Tehachapi slender salamander is likely to occur within Segment 2 in one general location – near Grapevine Creek and nearby Fort Tejon State Historic Park in moist shaded woodlands and canyon bottoms above 3,100 ft amsl. The Tehachapi slender salamander does not occur within other portions of the GKR Project alignment (CNDDB 2020).

The yellow-blotched salamander (*Ensatina eschscholtzii croceater*) is a USFS Sensitive species that occurs in evergreen and deciduous forests, under rocks, logs, and other surface debris, especially on shaded north-facing areas near creeks or streams in the GKR Project region. Two CNDDB records were reported on or near Segment 2 in the Castac Valley near or at Fort Tejon State Historic Park; a 2001 record overlaps the alignment and a 1989 record was reported nearby. A 2004 record was reported approximately 0.8 miles east of Segment 3 to the east of Crane Valley. The yellow-blotched salamander is likely to occur within the GKR Project alignment on USFS land in the LPNF between Fort Tejon State

Historic Park and Gorman in Segments 2 and 3, particularly near Fort Tejon State Historic Park, but does not occur elsewhere within the alignment.

*5.4.1.5.2.3 Reptiles*

No special-status reptiles were observed within the GKR Project alignment during the 2017 – 2018 surveys. Six special-status reptiles have the potential to occur within the alignment in suitable habitat, and an additional two species are unlikely to occur but may be present.

The blunt-nosed leopard lizard (*Gambelia sila*) is a Federally Endangered, California Endangered, and CDFW Fully Protected species. No critical habitat rules have been published for the blunt-nosed leopard lizard. Blunt-nosed leopard lizards inhabit the San Joaquin Valley and nearby valleys and foothills in the GKR Project area, generally below 2,400 ft amsl (Zeiner et al. 1988, USFWS 2010a). The GKR Project alignment lies within the breeding range of the blunt-nosed leopard lizard between the existing Kern River 1 Hydroelectric Substation to just south of Grapevine Canyon. In Segment 1, a 1990 CNDDB observation touches the alignment east of Arvin. Near "the T" where Segments 1 and 2 intersect southeast of the City of Arvin at the mouth of Little Sycamore Canyon, there are both older and more recent (2011-2016) CNDDB observations that overlap the alignment or occur within 0.7 mile. These observations were reported from the same general location near the mouth of Little Sycamore Canyon and north of Warm Spring north of Comanche Point. Additional records in Segment 2 were reported near the California Aqueduct between the communities of Wheeler Ridge and Grapevine almost 30 years ago, and an 1863 observation was reported from Grapevine Canyon. Suitable habitat for the blunt-nosed leopard lizard within the GKR Project alignment is characterized as sparsely vegetated scrub and grassland habitats in areas of low topographic relief in the southern San Joaquin Valley and surrounding foothills of the Sierra Nevada and Tehachapi Mountains, and it is likely to occur in two areas within the GKR Project alignment – where the alignment crosses annual grassland and open scrub habitat in the San Joaquin Valley and nearby foothills of the Tehachapi Mountains north and south of Comanche Point southeast of the City of Arvin in Segments 1, 2, and 4, and near the California Aqueduct between the communities of Wheeler Ridge and Grapevine in Segment 2.

Five reptile species were not observed but may occur within the GKR Project alignment based on CNDDB records; all are CDFW Species of Special Concern. CNDDB records more than 75 years old for the California legless lizard (*Anniella* sp.) exist near Segment 1 on the north side of the Kern River and near Segment 2 northeast of the community of Wheeler Ridge in what is now active agricultural land and at Fort Tejon State Historic Park. An 1884 observation overlaps the alignment at Fort Tejon State Historic Park. A 2012 CNDDB record exists east of the GKR Project alignment and west of Bailey Substation (CNDDB 2020). The California legless lizard is unlikely to be present but may potentially occur within the GKR Project alignment between Fort Tejon State Historic Park and Gorman Substation, although there are no current records for this species.

A 2007 CNDDB record exists for the Bakersfield legless lizard (*Anniella grinnelli*) approximately 0.2 miles east of Segment 1 in Caliente Creek in the Sand Ridge Preserve. The Bakersfield legless lizard is likely to occur within the GKR Project alignment in moist, loose soils in one location, near or in Caliente Creek.

The coastal whiptail (*Aspidoscelis tigris stejnegeri*) is a subspecies of the more widespread western whiptail (*Aspidoscelis tigris*). The subspecies *stejnegeri* of western whiptail occurs from coastal southern California to Baja California in desert to semi-arid areas with sparse vegetation – including chaparral, woodland, and riparian habitats. The GKR Project alignment is located on the northern edge of the coastal whiptail range. Western whiptails (*Aspidoscelis tigris*) were observed on the GKR Project alignment on Tejon Ranch in Segment 2; however, the individuals could not be identified to subspecies. A CNDDB record for an adult coastal whiptail was reported between the Gorman and Bailey substations but there are no records north of this area near Segment 3 (CNDDB 2020). The coastal whiptail is unlikely to occur within the GKR Project alignment in one location: in the southern Tehachapi Mountains near Gorman Substation.

A 2012 CNDDB record of San Joaquin coachwhip (*Masticophis* [*Coluber*] *flagellum ruddocki*) was reported approximately 1.4 miles east of Segment 2 south of Tejon Creek in the western Tehachapi Mountains; other records are more than 3 miles from the Kern River alignment. The San Joaquin coachwhip may occur in Segment 2 south of Comanche Point but is unlikely to occur elsewhere within the alignment.

A 2010 CNDDB record for the coast horned lizard (*Phrynosoma blainvillii*) was reported immediately adjacent to the east side of Segment 3 between Castac Lake and the Gorman Substation. A 2006 record was reported 0.25 mile east of the Gorman Substation (CNDDB 2020). The coast horned lizard is likely to occur within the GKR Project alignment in Segment 3 and is unlikely to occur elsewhere within the alignment.

An additional CDFW Species of Special Concern that is unlikely to occur within the GKR Project alignment, but that could potentially be present in the Sierra Nevada foothills in Segment 1, is the California glossy snake (*Arizona elegans occidentalis*). The USFS Sensitive species, San Bernardino ringneck snake (*Diadophis punctatus modestus*), is unlikely to occur but could be present in Segment 2 east of Fort Tejon State Historic Park (CNDDB 2020).

*5.4.1.5.2.4 Birds*

Nine special-status avian species were observed during the special-status surveys, including one California Threatened species, the tricolored blackbird; one CDFW Fully Protected species, the golden eagle; and seven CDFW Species of Special Concern, including the burrowing owl, Vaux’s swift, northern harrier, loggerhead shrike, Oregon vesper sparrow, purple martin, and yellow warbler.

The tricolored blackbird is a California Threatened species and CDFW Species of Special Concern when nesting. Tricolored blackbirds occupy and nest in wetlands, swamps, and cattail or tule marshes and commonly forage in fields and farms in California's Central Valley and surrounding foothills; portions of the GKR Project alignment in the San Joaquin Valley and wetlands near Castac and Lebec occur within the breeding range of the tricolored blackbird. A small group of tricolored blackbirds was observed in Segment 2 along Grapevine Creek in the Castac Valley. A 2011 CNDDB record occurs east of Segment 3 in a tributary to Gorman Creek between Gorman Substation and Bailey Substation. This nesting record spans several years between 1998 and 2011. One undated CNDDB potential nesting occurrence was reported in Segment 3 at the southern end of Castac Lake (CNDDB 2020). A 1988 eBird observation of a probable nesting colony was reported near Laval Road west of Segment 2 and east of the community of Wheeler Ridge, and a 2018 observation of greater than 80 birds was reported at Brite Lake east of the Banducci Substation (Cornell 2020a). The tricolored blackbird is likely to nest in Segment 3 at Castac Lake and may nest near Gorman Substation, as well as at Brite Lake.

The golden eagle is a CDFW Fully Protected species that typically nests on steep cliffs and ledges and forages over broad areas of varied habitat; less often, they will nest in medium to tall trees adjacent to open country or in utility towers (Cornell 2020b). Portions of the GKR Project alignment occur within the breeding range of the golden eagle. One golden eagle and one active nest with one eaglet were observed on two occasions in a tower on an adjacent alignment within 0.1 mile of Segment 4 at 3,200 ft amsl within open Blue Oak Woodland approximately six miles northwest of the community of Stallion Springs. A golden eagle was also observed perching on a pole in Segment 4 southeast of the City of Arvin and the California Aqueduct. A 1949 CNDDB nesting record was reported east of the Gorman Substation, and a 2004 record of a golden eagle in a pine “nest tree” was reported east of Segment 3 within a tributary to

Gorman Creek (CNDDB 2020). The golden eagle is likely to forage within the GKR Project alignment and is also likely to nest in Segment 4, and it could nest elsewhere within the GKR Project alignment, especially in trees and on utility structures, but is unlikely to do so based on existing nesting data.

The burrowing owl is a CDFW Species of Special Concern for burrowing sites and some wintering sites. In California, high-density burrowing owl populations have been documented in agricultural areas in the San Joaquin and Imperial valleys. Portions of the GKR Project alignment occur within the breeding range of the burrowing owl. Burrowing owls occur and nest in annual and perennial grasslands, agricultural fields, deserts, and scrublands characterized by low-growing vegetation where the shrub canopy covers less than 30 percent of the ground surface, often in association with burrowing mammals (California Burrowing Owl Consortium 1997). A single burrowing owl and two active burrows were observed within Segment 4 southeast of the City of Arvin and east of the California Aqueduct at 600 ft amsl. There are 14 CNDDB burrowing owl records within 3 miles of the alignment near Segment 1 and Segment 2 in grassland vegetation or agricultural areas (CNDDB 2020). There are seven eBird records for the burrowing owl in the vicinity of the GKR Project alignment from the City of Arvin south to the communities of Grapevine and Lebec. Observations of the burrowing owl within the past 20 years have been reported in only two locations: in or within 2 miles of Segments 2 and 4 both north and south of Comanche Point at the base of the western foothills of the Tehachapi Mountains, and in Segment 3 near the community of Lebec, based on eBird observations (Cornell 2020a). The burrowing owl is likely to occur within Segments 2 and 4 in suitable habitat in one location – at the base of the western foothills of the Tehachapi Mountains northeast of Comanche Point and southeast of the City of Arvin. The burrowing owl could occur elsewhere within the GKR Project alignment in suitable habitat such as near the community of Lebec; but is unlikely to do so based on existing observation and nesting data.

The Vaux's swift is a CDFW Species of Special Concern when nesting. The Vaux's swift is a summer resident of California that typically nests in coniferous or mixed hardwood forest and forages in forest openings, especially above streams and in old growth stands in hollow trees and snags. The GKR Project alignment is located south of the known breeding range of the Vaux's swift. The Vaux's swift was observed near Segment 3 with a mixed flock of swallows on the west side of Castac Lake. No CNDDB records occur within the GKR Project alignment (CNDDB 2020). There are seven eBird records in the vicinity of the GKR Project alignment, including in the Kern River canyon, the western foothills of the Tehachapi Mountains, Brite Lake, and the community of Lebec; none of these are nesting records (Cornell 2020a). The Vaux's swift is likely to occur as a transient within the GKR Project alignment while foraging or during migration but does not nest within the alignment, since the GKR Project alignment occurs south of the breeding range for this species and no suitable nesting habitat is present.

The northern harrier is a CDFW Species of Special Concern when nesting. Northern harriers inhabit freshwater and coastal salt marshes, as well as grasslands and open scrub habitats, and portions of the GKR Project alignment occur within the breeding range of the northern harrier. One northern harrier was observed foraging within Segment 3 west of Castac Lake in Baltic and Mexican Rush Marshes. There are no CNDDB occurrences of the northern harrier near the GKR Project alignment (CNDDB 2020). There are at least 15 eBird records for the species within or near the GKR Project alignment, including in: the Kern River drainage; Cottonwood Creek; Caliente Creek; the western foothills of the Tehachapi Mountains; the southern San Joaquin Valley; Fort Tejon State Historic Park; the communities of Lebec and Gorman; in Hardstem Bulrush Marsh surrounded by willows located in a tributary to Gorman Creek between Gorman Substation and Bailey Substation; and east of the Bailey Substation at Quail Lake. None of these observations represented nesting records for this species (Cornell 2020a). The northern harrier is likely to occur within the GKR Project alignment for brief periods while hunting. Suitable nesting habitat is present within the grassland and wetland areas by Castac Lake in Segment 3, but there are no nesting records here or elsewhere within the alignment, suggesting this species does not nest within the GKR Project alignment.

The loggerhead shrike is a CDFW Species of Special Concern when nesting. Loggerhead shrikes are year-round residents that prefer open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Portions of the GKR Project alignment occur within the breeding range of the loggerhead shrike (CDFW 2020d). Loggerhead shrikes were observed within the GKR Project alignment during the special-status wildlife surveys. One loggerhead shrike was observed foraging in Blue Oak Woodland above Little Sycamore Canyon in the western Tehachapi Mountains in Segment 4. One loggerhead shrike was observed foraging in a wash supporting Mulefat Thickets just southeast of the community of Grapevine in Segment 2. One loggerhead shrike was observed in Narrowleaf Goldenbush – Bladderpod Scrub west of Bailey Substation on two different occasions, east of Segment 3. No CNDDB occurrences have been reported within the GKR Project alignment but there are over 20 eBird observations in all segments (CNDDB 2020, Cornell 2020a). The loggerhead shrike forages within portions of the GKR Project alignment and could nest within the GKR Project alignment in shrublands and woodlands that provide suitable nesting sites with dense woody foliage.

The Oregon vesper sparrow is a CDFW Species of Special Concern while wintering; it is under review for listing by USFWS (USFWS 2020). The Oregon vesper sparrow is one of four subspecies of the vesper sparrow (*Pooecetes gramineus*); the vesper sparrow species has a broad distribution across North America, but the foraging range of the Oregon subspecies is confined to southwestern British Columbia south into northern Baja California. The breeding range of the Oregon vesper sparrow includes southwestern British Columbia, western Washington and Oregon, and northwestern California. Oregon vesper sparrows are a winter resident of California between September and April, primarily in lowlands south of San Francisco Bay and west of the Sierra Nevada, where it may be found in grasslands, meadows, pastures, and roadsides feeding on seeds and invertebrates (Shuford and Gardali 2008, Cornell 2020b). Members of this subspecies have been known to remain in California throughout the year; however, there is potential overlap in the range of this subspecies with the western range of the Great Basin subspecies of vesper sparrow (subsp. *confinis*) in this region (Shuford and Gardali 2008, Altman 2017). The Great Basin vesper sparrow is not a sensitive wildlife species. One Oregon vesper sparrow was observed within the GKR Project alignment in Segment 2 southeast of the community of Grapevine at the base of the Tehachapi Mountains on May 17, 2017. Generally, Oregon vesper sparrows are winter residents in California, arriving by mid-September and departing by the end of April. There are no recorded CNDDB occurrences for this species within 5 miles of the GKR Project alignment (CNDDB 2020). There are several eBird records for the vesper sparrow in the GKR Project region (eBird does not separate vesper sparrow observations by subspecies), including near or overlapping the GKR Project alignment near Cottonwood Creek and Caliente Creek in Segment 1, near Comanche Point, and in the agricultural lands between Comanche Point and the community of Grapevine in Segment 2 (Cornell 2020a). The Oregon vesper sparrow is likely to occur within the GKR Project alignment in suitable wintering habitat, as described, but does not nest within the alignment, based on lack of nesting records within the GKR Project area.

The purple martin (*Progne subis*) is a CDFW Species of Special Concern when nesting. They occur within the GKR Project alignment primarily as a summer resident and migrant, and most nesting records occur north of the City of Stockton on the floor of the Central Valley (Shuford and Gardali 2008). There are, however, records of nesting purple martins in old woodpecker cavities in oak woodlands in the Tehachapi Mountains, and 23 nesting pairs were reported in a 2010 purple martin study at Tejon Ranch; the lowest elevation for nesting purple martins in this study was 3,166 ft amsl (Shuford and Gardali 2008, White et al. 2011). The nearest purple martin nest to the GKR Project alignment was less than one mile east of Segment 2 at 4,800 ft amsl by Grapevine Peak; the elevation of the GKR Project alignment in this area is below 3,000 ft amsl. One purple martin was observed in Segment 4 on a power line 2.4 miles southeast of Power Line Road in the City of Arvin. CNDDB records within 5 miles of the GKR Project alignment occur east of Segment 2 and south of Comanche Point (CNDDB 2020). eBird observations of this species are concentrated in Segment 4 (Cornell 2020a). The purple martin is likely to forage within the GKR Project alignment in the Tehachapi Mountains between the City of Arvin and the community of Stallion Springs in Segments 2 and 4; however, based on the lack of nesting records it is unlikely to nest within the alignment.

The yellow warbler is a CDFW Species of Special Concern while nesting. The yellow warbler forage and nest in shrubby thickets and woodlands, particularly along watercourses and in wetlands where they commonly frequent trees including willows, alders, and cottonwoods up to elevations of 9,000 ft amsl in California (Shuford and Gardali 2008). Portions of the GKR Project alignment occur within the breeding range of the yellow warbler. One adult yellow warbler was observed foraging in Segment 3 in Fremont Cottonwood Forest on the west side of Castac Lake. There are no CNDDB records within the GKR Project alignment (CNDDB 2020). There are 10 eBird records within and near the GKR Project alignment, including in Segments 1, 2, and 3; none of these represent nesting observations (Cornell 2020a). The yellow warbler is likely to occur within the GKR Project alignment in suitable habitat while foraging but is unlikely to nest within the alignment.

Four Federally and or California-listed bird species have the potential to occur within the GKR Project alignment but were not observed during the special-status wildlife surveys: the California condor (*Gymnogyps californianus*), least Bell's vireo (*Vireo bellii pusillus*), bald eagle (*Haliaeetus leucocephalus*), and Swainson's hawk (*Buteo swainsoni*). Additional bird species designated as CDFW Species of Special Concern with a potential to occur within the GKR Project alignment but not observed are discussed in Appendix C.

The California condor is a Federally Endangered, California Endangered, and CDFW Fully Protected Species. Critical habitat was designated for the California condor in 1977 (42 FR 47840 47845) and overlaps the GKR Project alignment in the Tehachapi Mountains between the community of Wheeler Ridge and Digier Road north of Fort Tejon State Historic Park (Figure 5.4-6). California condors are opportunistic scavengers that require large areas of open foothill grassland, oak savannas and woodlands, rocky shrublands, and coniferous forests below 9,000 ft amsl and they roost in large trees, snags, and on cliffs and rocky outcrops, often in large groups, and return to roosting sites in successive years (USFWS 1996). Portions of the GKR Project alignment occur within the breeding range of the California condor (CDFW 2020d). No California condors were observed within the GKR Project alignment at the time of the special-status wildlife surveys. Non-roosting California condor observations have been reported in CNDDB and eBird in Segment 1 near the Kern River, and in Segments 2 and 4 in the Tehachapi Mountains (CNDDB 2020, Cornell 2020a). The California condor is likely to occur briefly along the alignment; however, it does not roost or nest within 2.5 miles of the GKR Project alignment.

The least Bell's vireo (*Vireo bellii pusillus*) is a Federally Endangered and California Endangered species. Critical habitat was designated for the least Bell's vireo in 1994 (59 FR 4845 4867). The GKR Project alignment does not lie within designated critical habitat for the least Bell's vireo. This species generally nests in extensive, undisturbed, multi-layered riparian forests, especially those dominated by willow and/or cottonwood trees. Portions of the GKR Project alignment occur within the historical breeding range of the least Bell's vireo but outside of critical habitat for this species (59 FR 4845 4867). The least Bell's vireo was not observed during the special-status wildlife surveys. A single 1973 CNDDB observation of a potentially nesting, singing male Bell's vireo was reported from the City of Arvin, approximately 0.5 mile west of Segment 1. This location previously supported other nesting individuals, but the decline of least Bell's vireos near the City of Arvin has been attributed to brood parasitism by the brown-headed cowbird (*Molothrus ate*) (CNDDB 2020). Based on the lack of recent observations and fragmentation and disturbance of riparian habitat within the GKR Project alignment, the least Bell's vireo does not nest within the GKR Project alignment.

The bald eagle is a California Endangered, CDFW Fully Protected species when nesting or wintering and a USFS Sensitive species. Bald eagles construct a stick nest in large, old-growth mostly evergreen trees with open branches, especially ponderosa pine; they also nest on cliff faces and nests tend to be located within one mile of water. The GKR Project alignment is outside of the breeding range of the bald eagle; there are no nesting records within or near the GKR Project alignment (CDFW 2020d, CNDDB 2020, Cornell 2020a). A 2001 CNDDB wintering record for the bald eagle overlaps Segment 2 near the California Aqueduct, and there are numerous eBird observations of the bald eagle, including within Kern River canyon, Caliente Creek, Brite Lake, near the California Aqueduct, near Grapevine Creek east of the community of Grapevine, at the Tejon Ranch headquarters, Castac Lake, and Quail Lake to the east of the community of Gorman and east of Bailey Substation (CNDDB 2020, Cornell 2020a). The bald eagle is likely to forage within the GKR Project alignment on an occasional basis in areas near water, and suitable wintering habitat is present between the California Aqueduct and Grapevine Canyon in Segment 2, as well as in Kern River canyon in Segment 1, at Castac Lake in Segment 3, and at Brite Lake east of the Banducci Substation.

The Swainson's hawk is a California Threatened species and is a summer resident of California. Swainson's hawks forage in grasslands with scattered trees, riparian areas, savannas, and agricultural or ranch lands that support rodent populations (CDFW 2020d). Nests are generally located in solitary trees or in a small grove of trees along a stream or field. No Swainson's hawks or their nests were observed within the GKR Project alignment at the time of the special-status wildlife surveys. No CNDDB occurrences have been reported within the GKR Project alignment (CNDDB 2020). There are numerous eBird records for the Swainson's hawk within the GKR Project area, including by the Kern River and in agricultural fields north and south of California Highway 58 in Segment 1; near the California Aqueduct, at the community of Grapevine, in Grapevine Canyon, at Fort Tejon State Historic Park, near the community of Lebec, and near the community of Gorman in Segments 2 and 3; at the Stallion Springs Golf Course in Segment 5; and at Brite Lake east of the Banducci Substation (Cornell 2020a). The Swainson's hawk is likely to forage within the GKR Project alignment on an occasional basis during spring and summer months; it is unlikely to nest within the GKR Project alignment, based on the lack of nesting records within 5 miles of the alignment.

##### *5.4.1.5.2.5 Mammals*

Two special-status mammal species or their sign were observed during the special-status surveys, including one Federally Endangered and California Threatened species (the San Joaquin kit fox) and one CDFW Species of Special Concern (the American badger).

The San Joaquin kit fox is a Federally Endangered and California Threatened species. No critical habitat rules have been published for the San Joaquin kit fox. The San Joaquin kit fox is active year-round and occupies perennial and annual grasslands or grassy open habitats supporting scattered shrubby vegetation in the San Joaquin Valley. Portions of the GKR Project alignment occur within the breeding range of the San Joaquin kit fox (CDFW 2020d). A potential active San Joaquin kit fox burrow was observed in Segment 2 at the base of the western foothills of the Tehachapi Mountains just north of Comanche Point and south of the City of Arvin (east of Teale Road). Three CNDDB occurrences recorded in the past 10 years have been reported in the western foothills of the Tehachapi Mountains to the north and south of the potential kit fox burrow location described above and additional records within 5 miles of the GKR Project alignment occur near Segments 1, 2, and 3 within the San Joaquin Valley and associated foothills (CNDDB 2020). The San Joaquin kit fox is likely to occur within the GKR Project alignment in suitable habitat while hunting and roaming in and near the San Joaquin Valley and associated foothills of the southern Sierra Nevada and the margins of the Tehachapi Mountains. The San Joaquin kit fox is likely to maintain an active kit fox burrow in Segment 2 at the base of the Tehachapi Mountains near Comanche Point; the San Joaquin kit fox is unlikely to establish an active den within other locations in Segments 1 and 2 in low-elevation habitat within the San Joaquin Valley and nearby foothills of the southern Sierra Nevada and Tehachapi Mountains.

The American badger is a CDFW Species of Special Concern that is most abundant in friable soils in the drier open stages of shrub, forest, and herbaceous communities. Portions of the GKR Project alignment occur within the breeding range of the American badger (CDFW 2020d). No American badger individuals were observed within the GKR Project alignment during the special-status wildlife surveys; however, three active American badger dens were observed within the GKR Project alignment, based on the shape and size of the den and the claw mark patterns. One den was located at 1,000 ft amsl in Scalebroom Scrub near a tributary to Cottonwood Creek in Segment 1. Two American badger dens were located on the north-facing slopes of the Tehachapi Mountains in Segment 3 between 3,700 and 4,050 ft amsl in annual grasslands and Valley Oak Woodland. CNDDB records for the American badger near the alignment are concentrated in Segment 2 (CNDDB 2020). The American badger is likely to occur within the GKR Project alignment, especially in the foothills of the Sierra Nevada between the existing Kern River 1 Hydroelectric Substation and Highway 58 in Segment 1 and on the north-facing slopes of the Tehachapi Mountains between Castac Lake and the Gorman Substation in Segment 3; it could also have natal dens within the alignment in these areas. It is unlikely to have a natal den in other potentially suitable habitat in the Tehachapi Mountains in Segment 2 and does not occur in dense woody vegetation, rocky substrates, riparian woodlands and forests and seasonally inundated soils, areas under active agricultural production, and developed areas.

Two Federally- and or California-listed mammal species have the potential to occur within the GKR Project alignment but were not observed during the special-status wildlife surveys: the Tipton kangaroo rat and Nelson's antelope squirrel (*Ammospermophilus nelsoni*). The Tipton kangaroo rat is endemic to the southern San Joaquin Valley and surrounding foothills below 1,800 ft amsl; no areas reporting current populations of this species occur within the GKR Project alignment (CDFW 2020d). The Tipton kangaroo rat is likely to occur in two limited areas within the GKR Project alignment: in Segment 1 south of the foothills of the southern Sierra Nevada, where it was observed 20 years ago, as well as in grasslands and fallow agricultural land east of the community of Wheeler Ridge south to the community of Grapevine in Segment 2. Although the observations at the southern end of the San Joaquin Valley near the community of Grapevine are more than 40 years old, conditions remain within 3 miles that could support this species.

The Nelson's antelope squirrel occurs primarily in marginal habitats of low foothills and mountains on the western edge of the San Joaquin Valley; significant populations occur only in western Kern County in the Elk Hills and on portions of the Carrizo and Elkhorn plains. The only CNDDB records near the GKR Project alignment are more than 100 years old. The Nelson's antelope squirrel is unlikely to occur within the GKR Project alignment in uncultivated grasslands and low shrublands in Segment 2 between the California Aqueduct east of the community of Wheeler Ridge south to the community of Grapevine and does not occur elsewhere.

Additional mammal species, including bat species, designated as CDFW Species of Special Concern with a potential to occur within the GKR Project alignment but not actually observed are discussed in Appendix C.

*5.4.1.5.2.6 Invertebrates*

The monarch butterfly (*Danaus plexippus plexippus*) is a Federal Candidate species that overwinters in *Eucalyptus* and some other roost trees in a particular configuration that enables the monarch butterflies to cluster and remain warm through the winter months, with a nearby source of nectar. Milkweed plants (*Asclepias*) are the primary food source of the caterpillars. A single monarch butterfly individual was observed passing through the GKR Project alignment in the southern portion of Segment 2 north of the mouth of Grapevine Canyon. No known monarch butterfly overwintering sites occur nearby, nor was milkweed observed near the observation of the single monarch butterfly. Four CNDDB observations of monarch butterflies were reported during the winter months over 30 years ago between 3 and 10 miles west of the GKR Project alignment along the Kern River and in Bakersfield (CNDDB 2020). Overwintering monarch butterflies do not currently occur in these locations and have not been observed in over 30 years.

The conservancy fairy shrimp (*Branchinecta conservatio*) is a Federally Endangered species and has a S2 CDFW State Ranking. Designated critical habitat for this species was established in 2003 (68 FR 46684) but does not overlap the GKR Project alignment. The one CNDDB record within the GKR Project region is thought to have been inaccurately reported in a 1992 thesis (CNDDB 2020). There are currently eight locations known to support the conservancy fairy shrimp according to the USFWS; none of these locations occur within Kern or Los Angeles counties. The GKR Project alignment is outside of the known range of the conservancy fairy shrimp (USFSW 2020).

Additional invertebrate species designated as CDFW Species of Special Concern with a potential to occur within the GKR Project alignment but not observed are discussed in Appendix C. All CNDDB records for potential special-status invertebrate species within the GKR Project alignment are 30 or more years old, including records for an andrenid bee (*Andrena macswaini*), Crotch's bumble bee (*Bombus crotchii*), Comstock's blue butterfly (*Euphilotes battoides comstocki*), Moestan blister beetle (*Lytta moesta),* Morrison's blister beetle (*Lytta morrisoni),* San Emigdio blue butterfly (*Plebulina emigdionis),* and Kern River pyrg (*Pyrgulopsis greggi*).

### *5.4.1.6 Critical Habitat*

Under the FESA, the USFWS is required to designate critical habitat for specific geographic area(s) that contains features essential to the survival and recovery of threatened or endangered species (16 U.S.C. § 1533 [a][3]). Designated critical habitat includes occupied and unoccupied sites for feeding, roosting, cover, shelter, breeding and rearing, and movement or migration and must be managed to protect existing environmental resources tied to the survival and recovery of the listed species.

Approximately 138.6 acres of critical habitat designated for the California condor overlaps Segment 2 in the GKR Project alignment in the Tehachapi Mountains between the community of Wheeler Ridge and Digier Road north of Fort Tejon State Historic Park, as depicted in Figureset 5.4-6; additional critical habitat for the California condor occurs south of Segments 4 and 5 west of Cummings Mountain. Proposed work areas within California condor designated critical habitat totals approximately 62.2 acres.

No other federally listed species have designated critical habitat within five miles of the GKR Project alignment.

### 5.4.1.7 Native Wildlife Corridors and Nursery Sites

Migration corridors that provide habitat connectivity across a broader geographic area are critical to survival and reproduction for many plant and wildlife species. Similar terrain, vegetation types, water courses, mountain tops and ridgelines, and other natural features provide suitable contiguous habitat for passage from one area to another for food, water, and reproduction.

In the GKR Project alignment region, there is a confluence of mountain ranges and ecoregions. The Sierra Nevada is a north-south trending mountain range linking the Cascade Range to the north with the Transverse and Peninsular Ranges to the south. The Tehachapi Mountains represent one of the northernmost Transverse Ranges and link the southern Sierra Nevada to the east with the Coast Ranges and San Emigdio and other Transverse Ranges to the west. Four major Environmental Protection Agency (EPA) ecoregions intersect within the GKR Project alignment region: the Central Valley, Sierra Nevada, South Coast Ranges (including the Tehachapi Mountains and San Emigdio Range), and the Mojave Desert (EPA 2020) and as such, there are linkages between montane, foothill, grassland, and desert species.

The GKR Project alignment traverses 82 miles of varied terrain and crosses the Kern River drainage, as well as many minor drainages and dry washes. Segment 1 extends from north to south, providing potential contiguous habitat for wildlife species utilizing the foothills and drainages of the southern Sierra Nevada and similarly, the slopes of the Tehachapi Mountains to the south. The GKR Project alignment is located in the Pacific Flyway, which links avian breeding and foraging grounds in Alaska with warmer wintering areas to the south in tropical areas in Mexico, Central America, and northern South America. The surrounding mountain ranges serve as a funnel for migratory birds that fly parallel to these ranges within the Central Valley during migration. Migratory birds often stop at rivers, streams, wetlands, and man-made water features during migration; these may include the Kern River, Cottonwood Creek, and Caliente Creek in Segment 1; seasonal wetlands in the Central Valley in Segments 1 and 2; irrigation canals in Segments 1 and 2; seasonal wetlands associated with Tejon Creek, El Paso Creek, and Grapevine Creek in Segment 2; Castac Lake and associated wetlands near Lebec in Segments 2 and 3; Gorman Creek in Segment 3; wetlands associated with Chanac and Cummings Creeks in the Cummings Valley east of the Banducci Substation; and wetlands associated with Brite Creek, Brite Lake, and unnamed north-facing drainages in the Tehachapi Valley east of the Banducci Substation.

The northwestern slope of the Tehachapi Mountains flanking Grapevine Canyon is listed as an "Important Bird Area" by the Audubon Society due to the extensive oak woodland vegetation and the high density of insect prey utilized by birds, especially purple martin nesting colonies. Tunis Canyon and nearby canyons extend from the San Joaquin Valley to higher elevations in the Tehachapi Mountains and provide corridors for southbound migratory birds such as snow, Canada, and white-fronted geese, Swainson's hawks and other raptors, white pelicans, swifts, and swallows (Audubon 2020).

Long stretches of contiguous grassland, shrubland, and woodland vegetation extend from the Sierra Nevada south through the Tehachapi Mountains between the existing Kern River 1 Hydroelectric Substation in Segment 1 and Gorman Substation in Segment 3. Upland shrublands and woodlands provide cover and foraging habitat to a range of wildlife species, as supported by a review of Figuresets 5.4-1 through 5.4-8, which repeatedly indicate a north-south distribution for several natural communities and special-status species along Segments 1, 2, and 3, as well as east-west distributions along Segment 5. Much of the Sierra Nevada portion of the GKR Project alignment in Segment 1 is roadless, with the exception of State Highway 58 bisecting the transition zone from the southern Sierra Nevada to the Tehachapi Mountains. In the southern portion of Segment 2, Interstate 5 presents a formidable east-west wildlife barrier to localized wildlife migrations between the San Emigdio and Tehachapi Mountains. The

San Joaquin Valley consists primarily of agricultural lands within the GKR Project alignment dissected by farm roads; in addition, wildlife corridors may be impeded by two canal systems, the Arvin – Edison Canal in Segment 1 and the California Aqueduct in Segment 2. Agricultural land usage and settlements may also impede wildlife movement in the Cummings, Brite, and Tehachapi valleys in Segment 5 and east of the existing SCE Banducci Substation. Nonetheless, the San Joaquin Valley serves as winter habitat for some species that return to the montane highlands in the summer. In addition to special-status species, a diverse array of wildlife utilize the rich habitat diversity in the San Joaquin Valley and surrounding mountains.

No recognized wildlife nursery sites occur within the GKR Project alignment.

#### *5.4.1.8 Biological Resource Management Areas*

The Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) area overlaps a portion of the north end of Segment 1. The MBHCP covers the following fauna: Tipton kangaroo rat, Greater kangaroo rat, the San Joaquin antelope squirrel, the San Joaquin kit fox, and blunt nosed leopard lizard. There are no Natural Community Conservation Planning areas (NCCPs) within the GKR Project alignment.

The GKR Project alignment is located within 5 miles of, but does not overlap, the following CDFW Owned and Operated Lands and Conservation Easements: Bakersfield Cactus Ecological Reserve (Segment 1) (CDFW 2021a).

The GKR Project alignment crosses the following CDFW Approved Mitigation Service Areas:

- Alkali Sink Conservation Bank. Credits available: Swainson’s Hawk, Burrowing Owl
- Black Mountain Conservation Bank. Credits available: Streams; Desert Tortoise; Mojave Ground Squirrel
- Chiquita Canyon Conservation Bank. Credits available: Coastal sage scrub; California gnatcatcher
- Petersen Ranch Mitigation Bank. Credits available: Swainson’s Hawk Foraging; CEQA - Alluvial floodplain; Ephemeral stream, Wetland riparian, Non-wetland riparian, Freshwater marsh, Open water, Seasonal wetland; Chaparral, Great Basin scrub; Valley and Foothill; Waters of the State
- Santa Paula Creek Mitigation Bank: Credits available: CDFW 1600 - Waters of the State; Wetlands, Coastal Sage and Floodplain Scrub, Chaparral, Riparian and Upland Woodland (CDFW 2021b)
- West Mojave Conservation Bank. Credits available: Intermittent stream/Riparian (Wash/Waters); Desert Tortoise

No portion of the GKR Project is known to be located within a biological resource management area identified in an applicable general plan.

### 5.4.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the GKR Project.

### 5.4.2.1 Federal

#### 5.4.2.1.1 Endangered Species Act (16 U.S.C. § 1531 et seq.)

The Endangered Species Act of 1973 (ESA) provides for the protection of plant and animal species listed by the federal government as "Endangered" or "Threatened," and "the ecosystems upon which they depend." An "Endangered" species is one that is "in danger of extinction" throughout all or a significant portion of its range. A "Threatened" species is one that is "likely to become endangered" within the foreseeable future.

Pursuant to Section 9 of the ESA, it is unlawful for any person to "take" a federally listed species. "Take," as defined by the ESA, "means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." This can also include the modification of a species' habitat. For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land and removing, cutting, digging up, damaging, or destroying any listed plant on nonfederal land in knowing violation of state law (16 U.S.C. § 1538(c))

#### 5.4.2.1.2 Migratory Bird Treaty Act (16 U.S.C. §§ 703 – 712)

The Migratory Bird Treaty Act of 1918 (MBTA) protects species of native, non-game, migratory birds. Specific provisions in the statute include a federal prohibition, except as allowed under specific conditions, to: "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention ... for the protection of migratory birds ... or any part, nest, or egg of any such bird." (16 U.S.C. § 703)

#### 5.4.2.1.3 Bald and Golden Eagle Protection Act (16 U.S.C § 668)

The Bald and Golden Eagle Protection Act of 1940 (BGEPA) provides for the protection of bald and golden eagles. The BGEPA establishes criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The BGEPA defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

#### 5.4.2.1.4 Clean Water Act of 1972

Enacted in 1972, the federal Clean Water Act of 1972 (CWA; 33 U.S.C. § 1251 et seq.) and subsequent amendments outline the basic protocol for regulating discharges of pollutants to waters of the U.S. It is the primary federal law applicable to water quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. Enforced by the USEPA, it was enacted "… to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The CWA authorizes States to adopt water quality standards and includes programs addressing both point and non-point pollution sources.

The CWA also established the established the NPDES and provides the USEPA the authority to implement pollution control programs, such as setting wastewater standards for industry and water quality standards for surface waters (see below for a discussion of the NPDES program). In California, programs and regulatory authority under the CWA have been delegated by USEPA to the SWRCB and its nine RWQCBs.

Under Section 402 of the CWA, a discharge of pollutants to navigable waters is prohibited unless the discharge complies with an NPDES permit. The SWRCB and RWQCBs have also developed numeric and narrative water quality criteria to protect beneficial uses of state waters and waterways. Beneficial uses in the GKR Project Area include water supply, groundwater recharge, aquatic habitat, wildlife habitat, and recreation.

*5.4.2.1.4.1 Section 401 – Water Quality Certification*

Section 401 of the CWA specifies that, for any activity that may result in a discharge into waters of the U.S., the SWRCB or applicable RWQCB must certify that the discharge will comply with state water quality standards, including beneficial uses (23 CCR § 3830, et seq). Under California's policy of no net loss of wetlands, the SWRCB and RWQCBs require mitigation for dredge and fill impacts to wetlands and waterways.

Dredge and fill activities in wetlands and waterways that impact waters of the U.S. would require a Federal Section 404 permit from the USACE. These permits trigger the requirement to obtain a Section 401 certification, which must be obtained prior to issuance of a Section 404 permit.

*5.4.2.1.4.2 Section 404 – Permitting for Dredge and Fill Activities in Wetlands and Waters of the U.S.*

The USACE is responsible for issuing permits under CWA Section 404 for placement of fill or dredged material in waters of the U.S. and jurisdictional wetlands. Waters of the U.S. refers to oceans, bays, rivers, streams (including non-perennial streams with a defined bed and bank), lakes, ponds, and seasonal and perennial wetlands.

Project proponents must obtain a permit from the USACE for all discharges of fill or dredged material before proceeding with a proposed activity. The USACE may issue either an individual permit or a general permit. General permits are preauthorized at the regional or national level and are issued to cover activities expected to result in only minimal adverse environmental effects (e.g., Los Angeles District Regional General Permit No. 63 for Repair and Protection Activities in Emergency Situations). NWPs are a type of general permit issued to cover activities that the USACE has determined to have minimal adverse effects, such as routine maintenance (e.g., Nationwide Permit 3) or utility line activities (e.g., Nationwide Permit 12). Each NWP specifies particular conditions that must implemented by the permittee.

### *5.4.2.2 State*

#### 5.4.2.2.1 California Fish and Game Code §§ 1600-1617, Lake and Streambed Alteration Agreement

If a project includes alteration of the bed, banks, or channel of a stream, or the adjacent riparian vegetation, then a Lake and Streambed Alteration Agreement (LSAA) may be required from CDFW. California Fish and Game Code Sections 1600-1616 regulate activities that could alter the flow, bed, banks, channel, or associated riparian areas of a river, stream, or lake—all considered "waters of the state." The law requires any person, state, or local governmental agency or public utility to notify CDFW before beginning an activity that would substantially modify a river, stream, or lake.

#### 5.4.2.2.2 California Endangered Species Act (California Fish and Game Code § 2050-2100)

The California Endangered Species Act (CESA) generally parallels the provisions of the FESA, and states that "all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved." The CDFW administers the CESA and has committed itself to work with all interested persons, agencies, and organizations to protect and preserve such special-status resources and their habitats.

Under the CESA, "Endangered" is defined as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range;" and "Threatened" is defined as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts." "Take" is defined as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" an individual of a species, but the definition does not include "harm" or "harass," as the FESA does.

Consistent with the CESA, CDFW has established lists of endangered, threatened, and candidate species that may or may not also be included on a FESA list. Pursuant to California Fish and Game Code Section 2081, CESA allows for incidental take permits to otherwise lawful development projects that could result in the take of a state-listed Threatened or Endangered species. Further, CESA allows for take of state endangered plants pursuant to 1913(b) of the Native Plant Protection Act (NPPA). The application for an incidental take permit under California Fish and Game Code Section 2081 (b) has a number of requirements including identification of minimization measures to reduce the potential for take and how take of listed species will be mitigated. CESA emphasizes early consultation to avoid potential impacts on rare, endangered, and threatened species and to develop appropriate mitigation planning to offset project-caused losses of listed species.

#### 5.4.2.2.3 Native Plant Protection Act (California Fish and Game Code §§ 1900-1913, 2062 and 2067)

The NPPA identifies the types of plant species eligible for state listing. Eligible species include those identified with CRPR of 1A, 1B, and 2, which meet the definitions of Sections 1901, Chapter 10 (NPPA) or Sections 2062 and 2067 (CESA) of the California Fish and Game Code (CFGC).

Section 1913(b) states "the performance by a public agency or publicly or privately owned public utility of its obligation to provide service to the public, shall not be restricted by this chapter because of the presence of rare or endangered plants."

#### 5.4.2.2.4 California Fish and Game Code §§ 3503, 3503.5, 3513, and 3800

CFGC Section 3513 furthers the intent of the MBTA by prohibiting any take or possession of birds in California designated by the MBTA as migratory nongame birds, except as allowed by federal rules and regulations promulgated pursuant to the MBTA. In addition, CFGC Sections 3503, 3503.5, 3511, and 3800 further protect nesting birds and their parts, including passerine birds, raptors, and state "fully protected" birds. These regulations protect almost all native nesting birds, not just special-status status birds.

#### 5.4.2.2.5 California Fish and Game Code §§ 3511, 4700, 5050, and 5515

CFGC Sections 3511, 4700, 5050, and 5515 govern the protection of bird, mammal, reptile, amphibian, and fish species identified as "fully protected." Fully protected animals may not be harmed, taken, or possessed and CDFW may not issue take authorization for fully protected species. The classification of "Fully Protected" was the state's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under the state and/or federal endangered species acts; white-tailed kite (*Elanus leucurus*), golden eagle, trumpeter swan (*Cygnus buccinator*), northern elephant seal (*Mirounga angustirostris*), and ring-tailed cat (*Bassariscus astutus*) are the exceptions. The white-tailed kite and the golden eagle are tracked in the CNDDB; the trumpeter swan, northern elephant seal, and ring-tailed cat are not.

#### 5.4.2.2.6 California Public Resources Code §§ 4292 and 4293

Section 4292 directs the owner, controller, operator, or maintainer of electrical transmission lines in mountainous land, forest-covered land, brush-covered land, or grass-covered land to maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightning arrester, line junction, or dead end or corner pole; a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of such pole or tower; and Section 4293 requires the same to maintain a clearance of 4 feet from any line which is operating at 2,400 or more volts, but less than 72,000 volts.

#### 5.4.2.2.7 California Public Utilities Commission, General Order 95, Rule 35, Vegetation Management

Rule 35 mandates that certain vegetation management activities be performed in order to establish necessary and reasonable clearances, and establishes minimum clearances between line conductors and vegetation that under normal conditions shall be maintained. These requirements apply to all overhead electrical supply and communication facilities covered by this GO, including facilities on lands owned and maintained by California State and local agencies.

#### 5.4.2.2.8 Porter-Cologne Water Quality Control Act (California Water Code § 13000 et seq.)

The Porter-Cologne Water Quality Control Act of 1967 (California Water Code § 13000 et seq.) requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect waters of the State. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. Individual water quality control plans are prepared for each RWQCB. These plans set implementation policies, goals, and water management practices in accordance with the Porter-Cologne Water Quality Control Act. Waste discharge requirements and waivers are mechanisms used by the RWQCBs/SWRCB to control discharges and protect water quality.

The SWRCB adopted a State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. The Procedures consist of four major elements: 1) a wetland definition; 2) a framework for determining if a feature that meets the wetland definition is a water of the state; 3) wetland delineation procedures; and 4) procedures for the submittal, review and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities. The Procedures became effective May 28, 2020.

#### 5.4.2.2.9 California Native Plant Society

The California Native Plant Society (CNPS) is a private plant conservation organization dedicated to the monitoring and protection of sensitive species in California. CNPS has compiled an inventory comprising information focusing on geographic distribution and qualitative characterization of Rare, Threatened, or Endangered vascular plant species of California.

Sensitive species that occur or potentially could occur within the Project Area are based on one or more of the following: (1) the direct observation of the species during one of the biological surveys; (2) a record reported in the CNDDB; and (3) the Project Area is within known distribution of a species and contains appropriate habitat.

### *5.4.2.3 Local*

The CPUC has sole and exclusive state jurisdiction over the siting and design of the GKR Project. Pursuant to GO 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the GKR Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

#### 5.4.2.3.1 Kern County General Plan

The Conservation and Open Space Element contains the following goals and policies that are relevant to the GKR Project:

**1.10.10 Oak Tree Conservation**

**Policies**

65. Oak woodlands and large oak trees shall be protected where possible and incorporated into project developments.

66. Promote the conservation of oak tree woodlands for their environmental value and scenic beauty.

**Implementation Measures**

KK. The following applies to discretionary development projects (General Plan Amendment, zone change, conditional use permit, tract maps, parcel maps, precise development plan) that contains oak woodlands, which are defined as development parcels having canopy cover by oak trees of at least ten percent (10%), as determined from base line aerial photography or by site survey performed by a licensed or certified arborist or botanist. If this study is used in an Environmental Impact Report (EIR), then a Registered Professional Forester (RPF) shall perform the necessary analysis.

a. Development parcels containing oak woodlands are subject to a minimum canopy coverage retention standard of thirty percent (30%). The consultant shall include recommendations regarding thinning and diseased tree removal in conjunction with the discretionary project.

b. Use of aerial photography and a dot grid system shall be considered adequate in determining the required canopy coverage standard.

c. Adjustments below thirty percent (30%) minimum canopy standard may be made based on a report to assess the management of oak woodlands.

d. Discretionary development, within areas designated as meeting the minimum canopy standard, shall avoid the area beneath and within the trees unaltered drip line unless approved by a licensed or certified arborist or botanist.

LL. The following applies to development of parcels having oak tree canopy cover of less than ten percent (10%), but containing individual oak trees equal to or greater than a 12-inch diameter trunk at 4.5 feet breast height.

a. Such trees shall be identified on plot plans.

b. Discretionary development shall avoid the area beneath and within the trees unaltered drip line unless approved by a licensed or certified arborist or botanist.

c. Specified tree removal related to the discretionary action may be granted by the decision making body upon showing that a hardship exists based on substantial evidence in the record.

#### 5.4.2.3.2 Los Angeles County General Plan

The Los Angeles County General Plan addresses the following biological resources present in Segment 3: regional habitat linkages; riparian habitats, streambeds, and wetlands; woodlands; and Significant

Ecological Areas (SEAs). The northwestern end of the San Andreas SEA (SEA-17) overlaps the southern portion of Segment 3.

**III. Biological Resources**

**Regional Habitat Linkages -** Biological resources and important habitat areas in the unincorporated areas are part of a greater habitat linkage that extends beyond Los Angeles County boundaries.

…

The following linkages are important to ensure greater regional biodiversity, and species and habitat Connectivity …

- The San Andreas SEA is a linkage to the Santa Clara River Watershed, San Gabriel Mountains, Antelope Valley, and Tehachapi Mountains.

**Riparian Habitats, Streambeds and Wetlands -** … The County is dedicated to preserving its remaining wetlands and supports the wetland reclamation and conservation efforts of other public agencies and numerous non-profit organizations. In addition to County policy and regulation, projects that are subject to CEQA and located in a wetland are forwarded to applicable state and federal agencies for further review and permitting requirements.

**Woodlands -** The County's oak woodlands are an important resource that provides an abundance of aesthetic, ecological, and economic benefits to residents. Oak woodland habitats are the most diverse terrestrial ecosystems in California. Similarly, riparian woodlands, California walnut, juniper, and Joshua tree woodlands provide habitat for multiple species within a concentrated area. Various types of woodlands are found in the unincorporated areas, including riparian woodlands; California walnut woodlands in the San Gabriel Valley and Puente Hills; juniper and Joshua tree woodlands in the Antelope Valley; and oak woodlands countywide.

#### 5.4.2.3.3 Los Angeles County Code - Oak Tree Ordinance and Permitting

Title 22: PLANNING AND ZONING

Part 6: OAK TREE PERMITS

22.56.2050 Established--Purpose.

The oak tree permit is established (a) to recognize oak trees as significant historical, aesthetic and ecological resources, and as one of the most picturesque trees in Los Angeles County, lending beauty and charm to the natural and manmade landscape, enhancing the value of property, and the character of the communities in which they exist; and (b) to create favorable conditions for the preservation and propagation of this unique, threatened plant heritage, particularly those trees which may be classified as heritage oak trees, for the benefit of current and future residents of Los Angeles County. It is the intent of the oak tree permit to maintain and enhance the general health, safety and welfare by assisting in counteracting air pollution and in minimizing soil erosion and other related environmental damage. The oak tree permit is also intended to preserve and enhance property values by conserving and adding to the distinctive and unique aesthetic character of many areas of Los Angeles County in which oak trees are indigenous. The stated objective of the oak tree permit is to preserve and maintain healthy oak trees in the development process. (Ord. 88-0157 § 1, 1988: Ord. 82-0168 § 2 (part), 1982.)

22.56.2060 Damaging or removing oak trees prohibited--Permit requirements.

A. Except as otherwise provided in Section 22.56.2070, a person shall not cut, destroy, remove, relocate, inflict damage or encroach into a protected zone of any tree of the oak genus which is (a) 25 inches or more in circumference (eight inches in diameter) as measured four and one-half feet above mean natural grade; in the case of an oak with more than one trunk, whose combined circumference of any two trunks is at least 38 inches (12 inches in diameter) as measured four and one half feet above mean natural grade, on any lot or parcel of land within the unincorporated area of Los Angeles County, or (b) any tree that has been provided as a replacement tree, pursuant to Section 22.56.2180, on any lot or parcel of land within the unincorporated area of Los Angeles County, unless an oak tree permit is first obtained as provided by this Part 16.

B. "Damage," as used in this Part 16, includes any act causing or tending to cause injury to the root system or other parts of a tree, including, but not limited to, burning, application of toxic substances, operation of equipment or machinery, or by paving, changing the natural grade, trenching or excavating within the protected zone of an oak tree.

C. "Protected zone," as used in this Part 16, shall mean that area within the dripline of an oak tree and extending therefrom to a point at least five feet outside the dripline, or 15 feet from the trunks of a tree, whichever distance is greater. (Ord. 88-0157 § 2, 1988: Ord. 82-0168 § 2 (part), 1982.)

22.56.2070 Exemptions from Part 16 applicability.

The provisions of this Part 16 shall not apply to:

…

C. Emergency or routine maintenance by a public utility necessary to protect or maintain an electric power or communication line or other property of a public utility;

#### 5.4.2.3.4 City of Bakersfield General Plan

The General Plan does not contain any goals, policies, or implementation measures relevant to the GKR Project.

### *5.4.2.4 Habitat Conservation Plan*

The MBHCP area overlaps a portion of the north end of Segment 1. The MBHCP covers the Tipton kangaroo rat, the San Joaquin antelope squirrel, the San Joaquin kit fox, and the Bakersfield cactus. There are no NCCPs within the GKR Project alignment.

## 5.4.3 Impact Questions

### *5.4.3.1 Impact Questions*

The significant criteria for assessing the impacts to biological resources come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status in local or regional plans, policies, or regulations, or by the CDFW or USFWS
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS

- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridor, or impede the use of native wildlife nursery sites
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan.

#### *5.4.3.2 Additional CEQA Impact Question*

The CPUC has identified one additional CEQA impact question:

- Would the project create a substantial collision or electrocution risk for birds or bats?

### 5.4.4 Impact Analysis

#### *5.4.4.1 Impact Analysis*

##### 5.4.4.1.1 Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status in local or regional plans, policies, or regulations, or by the CDFW or USFWS?

*5.4.4.1.1.1 Construction*

**Less than Significant Impact with Mitigation.** Potential impacts on sensitive plant and wildlife species may include temporary loss of habitat associated with ground-disturbing activities and may also include other direct and indirect impacts.

The following subsections summarize the impact analyses for special-status plant and wildlife species and critical habitat. SCE will implement APMs that would reduce impacts to special-status species. Details on APMs are provided in Section 3.11.

**Special-status Plant Species.** A total of four special-status plant species were observed along the GKR Project alignment, including the Federally Endangered and California Endangered Bakersfield cactus and the Federally Endangered Kern mallow, as well as calico monkeyflower and Piute Mountains navarretia, which have a CRPR of 1B.1 or 1B.2. All four special-status plant species were observed in work areas or along access roads associated with the GKR Project (see Table 5.4-4 and Figureset 5.4-2). The Bakersfield cactus occurs within the GKR Project alignment in one location in Segment 1 above Caliente Creek. This location supports 300 individuals of Bakersfield cactus, many of which occur within a project work area, and will be avoided to the greatest extent practicable.

The Kern mallow occurs in two locations in or near the GKR Project alignment. One observation in Segment 1 occurs along an access road to a tower west of Mt. Adelaide on the east side of the Kern River drainage, where 150 individuals were documented; the second observation on Segment 4 occurs outside of work areas. Direct impacts to Kern mallow will be avoided to the greatest extent practicable, which may include scheduling work during the time of year when this seasonal annual has gone to seed and not yet germinated, as well as application of a protective covering over the access road margins where seed of this species may be present.

Calico monkeyflower was observed in several locations in Segment 4 and Piute Mountains navarretia was observed in Segments 1, 2, and 4.

Construction activities, including grading, vegetation clearing and grubbing, earth-moving, and vehicle traffic may result in the direct crushing or burial of individual plants, and may cause erosion and/or sedimentation that may alter the existing habitat for these species. In addition, loss of mature Bakersfield cacti, Kern mallow, and other native plants may result from construction activities. Construction-related traffic may create dust that adheres to leaves and interferes with photosynthesis and plant reproduction. Topsoil impacted from grading may contain seeds, bulbs, nutrients, and mycorrhizae that special-status plant species may utilize for survival and for maintaining sustainable colonies in an area. Incidental introductions of invasive non-native weeds as a result of construction activities have the potential to reduce habitat quality in the immediate area and beyond through direct competition and occupation of prime germination sites. Higher non-native plant cover, especially invasive grasses, may also facilitate fires in the area.

Three of the four observed special-status plant individuals are annuals that pass the dry season as seeds with no above-ground green foliage and underground storage organs. As a result, by scheduling construction work outside of the active growing season for these plants, impacts to many growing individuals can be avoided and seed set can be enhanced. Soil-disturbance activities may disturb existing seed bank of special-status and other native plants, along with bulbs, corms, rhizomes, and other soil storage organs. To avoid and minimize potential impacts to special-status herbaceous plants, individuals and colonies of these species would be flagged and avoided, and APM BIO-BOT-1: Special-status Herbaceous Plants would be implemented. To further avoid and minimize potential impacts to special-status plant species from construction activities such as native vegetation clearing and grubbing, grading, and earth-moving, SCE would implement APM BIO-GEN-1: Pre-construction Biological Clearance Survey and Monitoring, which includes pre-construction biological surveys and flagging boundaries of areas supporting native vegetation and special-status native species for avoidance. SCE would also implement APM WEAP: Worker's Environmental Awareness Training (WEAP), to ensure contractor understanding and implementation of these protective measures. SCE would also implement APM BIO-BOT-2: Special-status Perennial Plants and Other Species, which contains measures such as pre-construction surveys, flagging and marking for avoidance, and construction scheduling to avoid or minimize potential impacts to the Bakersfield cactus. To reduce competition from noxious and invasive weeds, which may crowd out special-status plant species, SCE would develop and implement an IPMP as described in APM BIO-RES-2: Develop Invasive Plant Management Plan. If populations or individuals of special-status plants cannot be avoided, SCE would implement required restoration activities as described in APM BIO-RES-1: Develop and Implement Habitat Restoration and Revegetation Plan (HRRP). The HRRP would include provisions to restore special-status species removed during Project activities, along with suitable habitat for the species. With the implementation of these APMs, impacts to all special-status plants would be less than significant.

**Special-status Wildlife Species.** A total of thirteen special-status wildlife species were observed along the GKR Project alignment, and thus have the potential to occur in construction work areas (see Table 5.4-6 and Figureset 5.4-4); these include observations of a burrow of the Federally-listed and California-listed species, the San Joaquin kit fox, in Segment 2; the California-listed tricolored blackbird in Segment 2; the CDFW Fully Protected golden eagle in Segment 2; and the following CDFW Species of Special Concern: the western spadefoot in Segment 4; burrowing owl in Segment 4; Vaux's swift in Segment 3; northern harrier in Segment 3; loggerhead shrike in Segments 2 and 4; Oregon vesper sparrow in Segment 2; purple martin in Segment 4; yellow warbler in Segment 3; and American badger in Segment 3.

Potential impacts on special-status wildlife species could occur during grading, vegetation clearing and grubbing, and earth-moving, and vehicle traffic may result in the direct crushing or burial of ground-dwelling wildlife and their burrows and habitat. Increased noise, artificial light, and increased human presence may restrict individuals from accessing foraging areas or may alter site conditions and reduce the overall quality of habitat available.

***Fish.*** There are no special-status fish species reported within the GKR Project alignment, and no Project impacts to special-status fish species.

***Amphibians.*** One special-status amphibian species was observed within the GKR Project area, the western spadefoot, which occurs near ponds and seasonal wetlands in valley and woodland habitats in Segment 4. Two special-status amphibian species have the potential to occur along the GKR Project alignment, the Tehachapi slender salamander (California Threatened) between Grapevine Creek and Fort Tejon State Historic Park in moist shaded woodlands and canyon bottoms in Segment 2 and the yellow-blotched salamander (USFS Sensitive species) in moist locations between Fort Tejon State Historic Park and Gorman in Segments 2 and 3 (CNDDB 2020).

The potential for impacts to the western spadefoot and yellow-blotched salamander is negligible because GKR Project construction work sites in these areas are generally in upland areas that are not suitable habitat for these amphibians. If present, potential impacts to the western spadefoot and yellow-blotched salamander could result from vehicle or equipment strikes, from individuals falling into excavation areas, and accidental sedimentation of aquatic habitat. Where construction work areas are located in or near suitable habitat for the western spadefoot and yellow-blotched salamander, and other sensitive amphibian species that might occur within work areas, SCE would implement APM BIO-GEN-:1 Pre-Construction Biological Clearance Survey and Monitoring and APM WEAP: Worker's Environmental Awareness Training (WEAP).

The potential for impacts to the Tehachapi slender salamander is negligible because GKR Project construction work sites in these areas are generally in upland areas that are not suitable habitat for these amphibians. If present, potential impacts to the Tehachapi slender salamander could result from vehicle or equipment strikes, from individuals falling into excavation areas, and accidental sedimentation of aquatic habitat. Where construction work areas are located in or near suitable habitat for the Tehachapi slender salamander, SCE will implement APM BIO-HERP-5: Tehachapi Slender Salamander to avoid all impacts.

The APMs discussed above contain measures, including pre-construction surveys, construction monitoring, and flagging and avoidance measures, to protect sensitive amphibians. Implementation of APM WET-1: Avoid and/or Minimize Impacts to Waters and Wetlands, would ensure minimization of impacts to wetlands and riparian areas, and thus would serve to reduce potential direct and indirect impacts to the habitat of special-status amphibian species.

***Reptiles.*** No special-status reptiles were observed within the GKR Project alignment during the 2017 – 2018 surveys. Although not observed, six special-status reptiles are likely to occur in portions of the GKR Project alignment (Figureset 5.4-5). The Federally Endangered and California Endangered and Fully Protected blunt-nosed leopard lizard is likely to occur in two areas within Segments 1, 2, and 4 in the San Joaquin Valley and nearby foothills of the Tehachapi Mountains north and south of Comanche Point and near the California Aqueduct between Wheeler Ridge and Grapevine. Three CSC reptile species have the potential to occur within the GKR Project alignment based on CNDDB observations in the past 25 years within 3 miles of the alignment in suitable habitat, including the Bakersfield legless lizard near Caliente Creek in Segment 1, San Joaquin coachwhip south of the mouth of Tejon Creek in Segment 2, and coast horned lizard between Castac Lake and Gorman in Segment 2. Two additional CSC reptile species that are unlikely to occur within the GKR Project alignment, but could potentially be present include the California glossy snake in the Sierra

Nevada foothills in Segment 1 and San Bernardino ringneck snake in Segment 2 east of Fort Tejon State Historic Park (CNDDB 2020).

Potential impacts to special-status reptile species may result from ground disturbing activities that can include vehicle or equipment strikes, individuals falling into excavation areas, and by the reduction of refugia habitats as well as accidental crushing or burying of active burrows by construction vehicles and activities. Ground-disturbing activities have the potential to increase colonization of weed species and reduce native vegetation. Incidental introductions of invasive non-native weeds have the potential to reduce habitat quality in the immediate area and beyond through direct competition and occupation of prime germination sites of prime forage species. Human activities and food waste may also pose threats to special-status reptile species by attracting opportunistic predators such as ravens, coyotes and feral dogs to construction work areas. The watering of access roads and construction work areas for dust mitigation can result in ponding, attracting reptiles into areas where they may be more susceptible to direct impacts.

The potential for impacts to special-status reptile species during construction would be temporary and intermittent in nature (lasting only as long as construction work at a given site) and would be limited in potential geographic scope.

To avoid or minimize potential impacts to reptiles from GKR Project construction activities such as native vegetation clearing and grubbing, grading, and earth-moving, SCE would implement APM BIO-GEN-1: Pre-construction Biological Clearance Survey and Monitoring, which includes pre-construction biological surveys and flagging boundaries of areas supporting native vegetation and special-status reptiles for avoidance, when feasible. SCE would also implement APM WEAP: Worker's Environmental Awareness Training (WEAP), to ensure contractor understanding and implementation of these protective measures. In addition, SCE would implement BIO-HERP-7: Blunt-nosed Leopard Lizard to avoid impacts to this listed species. The measures outlined in these APMs would serve to avoid or minimize potential impacts to the special-status reptile species.

With the implementation of these avoidance measures and APMs, impacts to the blunt-nosed leopard lizard and other special-status reptiles would be less than significant.

***Birds.*** Nine special-status avian species were observed during the special-status surveys, including one California Threatened species, the tricolored blackbird; one CDFW Fully Protected species, the golden eagle; and seven CDFW Species of Special Concern, including the burrowing owl, Vaux's swift, northern harrier, loggerhead shrike, Oregon vesper sparrow, purple martin, and yellow warbler. Four of these species were observed in association with rivers, streams, reservoirs, and wetlands, including the tricolored blackbird, Vaux's swift, northern harrier, and yellow warbler; all were observed in the Castac Valley or near Castac Lake in Segments 2 and 3. The Vaux's swift may also be present in Kern Canyon in Segment 1 based on non-nesting eBird observations; there are numerous eBird observations of the northern harrier in Segments 1, 2, and 3 (Cornell 2020a). Wintering Oregon vesper sparrows may be present in grasslands and weedy agricultural fields of the southern San Joaquin Valley and nearby foothills of the Tehachapi Mountains in Segment 1 near Cottonwood Creek and Caliente Creek and near Comanche Point and in the agricultural lands between Comanche Point and Grapevine in Segment 2 (Cornell 2020a). Other observed CDFW Species of Special Concern birds in upland grasslands, shrublands, and woodlands include the burrowing owl in Segment 4, loggerhead shrike in Segments 2 and 4, and purple martin in Segment 4.

Both the CDFW Fully Protected golden eagle and bald eagle are likely to occur within the GKR Project alignment. Golden eagles were observed at the western end of Segment 4 as well as nesting in Blue Oak Woodland west of Stallion Springs in Segment 4. There is suitable habitat for nesting golden eagles on nearby cliffs or on structures along the alignment in Segment 4, as well as in Kern Canyon in Segment 1 and the

Tehachapi Mountains in Segments 2 and 3. Although the bald eagle was not observed during the special-status wildlife surveys, a 2001 CNDDB record overlaps the GKR Project alignment near the California Aqueduct on the north side of Edmonston Pumping Plant Road east of Interstate 5; this record included wintering observations of an adult bald eagle perched on a dead tree snag. Suitable wintering habitat for the bald eagle is present between the California Aqueduct and Grapevine Canyon in Segment 2, as well as in Kern River canyon in Segment 1, at Castac Lake in Segment 3, and at Brite Lake east of the Banducci Substation.

The California Threatened Swainson's hawk was not observed during the special-status wildlife surveys but is likely to forage within the alignment on an occasional basis during spring and summer months; it is unlikely to nest within the alignment. Potential nesting and foraging habitat is also present for several avian species that were not observed but are protected under the MBTA and CFGC 3503.5.

Project work activities may potentially impact special-status birds, their nests, and foraging habitats. Potential impacts to special-status bird species may result from vegetation clearing and ground disturbance within nesting habitat, as well as accidental crushing or burying of ground nests or active burrows by construction vehicles. An increase in vehicle traffic and human presence could result in an interruption of normal bird nesting behaviors or nest abandonment. Project work activities may potentially impact the quality of foraging habitat for raptors, passerines, and other special-status bird species that use habitats within the GKR Project area.

Potential impacts to nesting and sensitive bird species during construction will be temporary and intermittent in nature (lasting only as long as construction work at a given site) and will be limited in their potential geographic scope.

SCE complies with the MBTA and CFGC Section 3503.5. To ensure compliance and to avoid and minimize potential impacts to special-status avian species from construction activities such as native vegetation clearing and grubbing, grading, and earth-moving, SCE would implement APM BIO-GEN-1: Pre-construction Biological Clearance Survey and Monitoring, which includes pre-construction biological surveys and flagging boundaries of areas supporting native vegetation and special-status bird habitat for avoidance, when feasible, as well as APM WEAP: Worker's Environmental Awareness Training, to ensure contractor understanding and implementation of these protective measures. SCE would develop a Nesting Bird Management Plan per APM BIO-AVI-1; the survey, avoidance, and adaptive management measures in the Plan would reduce impacts to nesting birds along the GKR Project alignment. Avoidance and minimization measures for the golden eagle are specifically outlined in APM BIO-AVI-3: Golden Eagle, including survey and nest buffer requirements. Avoidance and minimization measures for the burrowing owl are provided in APM BIO-AVI-2: Burrowing Owl. In addition, mitigation strategies such as restoration of suitable avian habitat are addressed in APM BIO-RES-1: Develop and Implement Habitat Restoration and Revegetation Plan (HRRP), and reduction of weed competition with important plant species in APM BIO-RES-2: Develop Invasive Plant Management Plan.

With the implementation of these avoidance measures and APMs, impacts to special-status birds would be less than significant.

***Mammals.*** Two special-status mammal species or their sign were observed during the special-status surveys, including one Federally Endangered and California Threatened species, the San Joaquin kit fox and one CDFW Species of Special Concern, the American badger. A potential active San Joaquin kit fox burrow was observed in annual grassland at the base of the Tehachapi Mountains near Comanche Point in Segment 2; the San Joaquin kit fox is unlikely to establish an active den in low-elevation habitat within the San Joaquin Valley and nearby foothills of the southern Sierra Nevada and Tehachapi Mountains except where a potential den was observed during the special-status wildlife surveys. American badger dens were observed in friable substrates in Segment 1 near a tributary to Cottonwood Creek in the southern Sierra Nevada between the Kern River Hydro Generation Facility and Highway 58 and on north-facing slopes of the Tehachapi Mountains between Castac Lake and the Gorman Substation in Segment 3. Two Federally or California-listed mammal species that were not observed but that have the potential to occur within the GKR Project alignment include the Tipton kangaroo rat in Segments 1 and 2 and Nelson's antelope ground squirrel in Segment 2.

Potential impacts to special-status mammal species may result from ground disturbing activities that can include vehicle or equipment strikes, individuals falling into excavation areas, disruption of migration pathways, reduction of refugia habitats, and accidental crushing or burying of active burrows by construction vehicles and activities. Ground-disturbing activities have the potential to increase colonization of weed species and reduce native vegetation. Incidental introductions of invasive non-native weeds have the potential to reduce habitat quality in the immediate area and beyond through direct competition and occupation of prime germination sites of prime forage species.

Potential impacts to special-status mammal species during construction of the GKR Project would be temporary and intermittent in nature (lasting only as long as construction work at a given site) and would be limited in their potential geographic scope.

To generally avoid and minimize potential impacts to special-status mammal species during construction, SCE would implement APM BIO-GEN-1: Pre-construction Biological Clearance Survey and Monitoring, which includes pre-construction biological surveys and flagging boundaries of areas supporting native vegetation and special-status mammal burrows, watering holes, and other habitat for avoidance, when feasible, as well as APM ENV-GEN-1 WEAP: Worker’s Environmental Awareness Training (WEAP), to ensure contractor understanding and implementation of these protective measures. In addition, mitigation strategies such as restoration of native habitat and forage species—which would reduce indirect impacts by restoring native habitat and reducing weed competition with important habitat and forage plant species upon which mammalian species rely—are addressed in APM BIO-RES-1: Develop and Implement Habitat Restoration and Revegetation Plan (HRRP) and APM BIO-RES-2: Develop Invasive Plant Management Plan. Implementation of these APMs would serve to reduce direct and indirect impacts to all mammals. Avoidance and minimization measures for the San Joaquin kit fox are specifically outlined in APM BIO-MAM-2: San Joaquin kit fox, including survey and monitoring requirements for den avoidance, establishment of den exclusion buffer zones, and construction impact avoidance and minimization measures. Avoidance and minimization measures for the Tipton kangaroo rat are summarized in APM BIO-MAM-3: Kangaroo Rat Species - Tipton kangaroo rat (TKR), including survey and construction avoidance requirements. To avoid and minimize potential impacts to bat species, SCE would implement APM BIO-MAM-6: Bats, Common and Sensitive Species. This APM would be implemented in areas where special-status bats are identified. With the implementation of these APMs, impacts to special-status mammals would be less than significant.

***Invertebrates.*** A single monarch butterfly individual was observed passing through the GKR Project alignment in the southern portion of Segment 2 north of the mouth of Grapevine Canyon. No known monarch butterfly overwintering sites occur nearby, nor was milkweed observed near the observation of the single monarch butterfly. No other special-status invertebrate species were observed during the special-status wildlife surveys and all CNDDB records for potential special-status invertebrate species within the GKR Project alignment are 30 or more years old.

To avoid potential impacts to other special-status invertebrate species, SCE would implement the APM BIO-GEN-:1 Pre-Construction Biological Clearance Survey and Monitoring and APM WEAP: Worker’s

Environmental Awareness Training (WEAP). These APMs contain measures, including pre-construction surveys, construction monitoring, flagging and avoidance measures, to protect special-status invertebrates. In addition, impact reduction strategies such as restoration of native habitat and reducing weed competition with important native plant species upon which some special-status invertebrate species rely—are addressed in APM BIO-RES-1: Develop and Implement Habitat Restoration and Revegetation Plan (HRRP) and APM BIO-RES-2: Develop Invasive Plant Management Plan. Implementation of these APMs would serve to reduce direct and indirect impacts to native invertebrates. With the implementation of these APMs, impacts to special-status invertebrates would be less than significant.

##### *5.4.4.1.1.2 Operation*

**Less than Significant Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included in the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project. To avoid impacts to birds from potential line strikes, all subtransmission facilities for the project would be designed to follow the intent of Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006 (APLIC 2006). Further, all subtransmission facilities would be evaluated for potential collision risk and, where determined to be high risk, lines would be marked with collision reduction devices in accordance with Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012). Impacts to special-status species are not anticipated to occur due to O&M, and with implementation of these APLIC measures, any impacts realized under this criterion during operations and maintenance would be less than significant.

#### 5.4.4.1.2 Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS?

##### *5.4.4.1.2.1 Construction*

**Less Than Significant Impact with Mitigation.** Thirty-one vegetation alliances and 45 associations were observed within the GKR Project alignment, including 23 sensitive natural communities, representing 13 sensitive alliances and 10 additional sensitive associations within non-sensitive alliances that cover 122.9 acres. Twenty-two of these sensitive natural communities occur in construction work areas, and anticipated impacts to sensitive vegetation as a result of construction activities total approximately 53.9 acres of temporary impacts and 3.3 acres of permanent impacts, as shown in Table 5.4-7.

Page intentionally left blank.

**Table 5.4-7. Potential Impacts to Sensitive Natural Communities**

| Vegetation Alliance | Vegetation Association | Area Mapped on GKR Project Alignment (acres) | Area Mapped within Anticipated Work Areas with Temporary Impacts (acres)[1] | Area Mapped within Anticipated Work Areas with Permanent Impacts (acres)[1] | California State Rarity Ranking |
|---|---|---|---|---|---|
| ***Woodland and Forest Vegetation*** | | | | | |
| Valley Oak Woodland | *Quercus lobata – Salix lasiolepis* Association | 0.2 | 0.2 | 0.0 | S2? |
| | *Quercus lobata* / grass Association | 14.8 | 8.9 | 0.5 | S3 |
| | *Quercus lobata – Salix laevigata* Provisional Association | 0.4 | 0.1 | 0.0 | S3 |
| Fremont Cottonwood Forest | *Populus fremontii – Salix lasiolepis* Association | 2.6 | 1.9 | 0.0 | S3.2 |
| | *Populus fremontii – Salix (laevigata, lasiolepis, lucida* subsp. *lasiandra*) Association | 1.2 | 0.9 | 0.0 | S3.2 |
| Shining Willow Groves | *Salix lucida* subsp. *lasiandra* Association | 2.5 | 1.2 | 0.0 | S3.2 |
| | *Salix lucida* subsp. *lasiandra / Urtica urens – Urtica dioica* Association | 0.1 | 0.1 | 0.0 | S3.2 |
| California Buckeye Groves | *Aesculus californica* Association | 5.5 | 1.2 | 0.1 | S3 |
| California Sycamore Woodland | *Platanus racemosa – Salix laevigata / Salix lasiolepis* Association | 4.4 | 0.5 | 0.0 | S3 |
| Goodding's Willow - Red Willow Riparian Woodlands | *Salix laevigata / Salix lasiolepis* Association | 0.9 | 0.8 | 0.1 | S3 |
| | *Salix laevigata* Association | 0.4 | 0.1 | 0.0 | S3 |
| Blue Oak Woodland | *Quercus douglasii – Quercus lobata* Association | 10.0 | 6.1 | 0.4 | Yes[2] |
| | ***Total Acres Woodland and Forest Vegetation*** | ***43.0*** | ***22.1*** | ***1.1*** | |
| ***Shrubland Vegetation*** | | | | | |
| Scalebroom Scrub | *Lepidospartum squamatum* / Ephemeral Annuals Association | 24.5 | 13.7 | 1.2 | S2 |
| Acton's and Virgin River Brittle Brush – Net-veined Goldeneye Scrub | *Encelia actonii* Association | 16.4 | 4.5 | 0.0 | S3 |
| California Joint-fir – Longleaf Joint-fir Scrub | *Ephedra californica* / Annual – Perennial Herb Association | 4.0 | 2.2 | 0.2 | S3 |
| Arroyo Willow Thickets | *Salix lasiolepis – Salix lucida* Association | 0.6 | 0.5 | 0.0 | S3? |
| | *Salix lasiolepis* Association | 0.5 | 0.5 | 0.0 | Yes[2] |

**Table 5.4-7. Potential Impacts to Sensitive Natural Communities**

| Vegetation Alliance | Vegetation Association | Area Mapped on GKR Project Alignment (acres) | Area Mapped within Anticipated Work Areas with Temporary Impacts (acres)[1] | Area Mapped within Anticipated Work Areas with Permanent Impacts (acres)[1] | California State Rarity Ranking |
|---|---|---|---|---|---|
| Narrowleaf Goldenbush – Bladderpod Scrub | *Cleome isomeris* Association | 30.2 | 9.2 | 0.6 | Yes[2] |
| | ***Total Acres Shrubland Vegetation*** | ***76.3*** | ***30.7*** | ***2.1*** | |
| ***Herbaceous Vegetation*** | | | | | |
| Yerba mansa - Nuttall's Sunflower - Nevada Goldenrod Alkaline Wet Meadows | *Anemopsis californica* Provisional Association | 0.05 | 0.05 | 0.0 | S2 |
| | *Solidago (confinis, spectabilis)* Provisional Association | 0.02 | 0.02 | 0.0 | S2 |
| American Bulrush Marsh | *Schoenoplectus americanus* / *Lepidium latifolium* Association | 0.6 | 0.0 | 0.0 | S3.2 |
| Ashy Ryegrass – Creeping Ryegrass Turfs | *Leymus triticoides* – *Bromus* spp. – *Avena* spp. Association | 2.7 | 1.0 | 0.1 | S3 |
| Needle Grass – Melic Grass Grassland | *Nassella cernua* Association | 0.2 | 0.2 | 0.0 | S3 |
| Common Monkey Flower Seeps | *Mimulus guttatus* Association | 0.02 | 0.02 | 0.02 | S3? |
| | ***Total Acres Herbaceous Vegetation*** | ***3.6*** | ***1.2*** | ***0.1*** | |
| | ***Total Acres Sensitive Native Vegetation*** | ***122.9*** | ***53.9*** | ***3.3*** | |

Notes:

1 Work areas as of May 2021

2 Alliance is not sensitive, but the association is sensitive on the 2020 CDFW Sensitive Natural Communities list

? A question mark represents a rank qualifier established by CDFW denoting an inexact or uncertain numeric rank.

**Alliance Rarity Rankings (CDFW 2020b, Sawyer et. al 2009):**

S1: Fewer than 6 viable occurrences statewide and/or up to 518 hectares
S2: 6-20 viable occurrences statewide and/or 518-2,590 hectares
S3: 21-100 viable occurrences statewide and/or 2,590-12,950 hectares
Yes – listed as sensitive on 2020 CDFW Sensitive Natural Communities list but no ranking or ranking extension added

**Additional Threat Ranks**

0.1: Very threatened
0.2: Threatened
0.3: No current threat known

The GKR Project is anticipated to result in impacts to sensitive natural communities, as listed in Table 5.4-7. These impacts would result from rehabilitating/upgrading existing access roads to meet current construction and O&M standards, from the installation of replacement structures, and from the removal of existing structures.

Construction activities, including grading, vegetation clearing and grubbing, earth-moving, rehabilitation of existing access roads, establishment of pull sites and laydown areas, and vehicle traffic may result in the direct crushing or burial of individual plants, along with erosion and/or sedimentation that may alter the existing habitat. Construction-related traffic may create dust that adheres to leaves and interferes with photosynthesis and plant reproduction. Topsoil impacted from grading may contain seeds, bulbs, nutrients, and mycorrhizae that plant species may utilize for survival and for maintaining sustainable colonies in an area. Incidental introductions of invasive non-native weeds as a result of construction activities have the potential to reduce habitat quality in the immediate area and beyond through direct competition and occupation of prime germination sites. Higher non-native plant cover, especially invasive grasses, may also facilitate fires in the area.

To avoid and minimize potential impacts to special-status natural communities from construction activities such as native vegetation clearing and grubbing, grading, and earth-moving, SCE would implement APM BIO-GEN-1: Pre-construction Biological Clearance Survey and Monitoring, which includes pre-construction biological surveys and flagging boundaries of areas supporting native vegetation and sensitive natural communities for avoidance, when feasible, as well as APM WEAP: Worker's Environmental Awareness Training, to ensure contractor understanding and implementation of these protective measures. SCE would also implement two measures that focus on avoiding and minimizing potential impacts to special-status herbaceous species, shrubs, trees, and cacti, which may be important components of natural communities in project work areas: APM BIO-BOT-1: Special-status Herbaceous Plants and APM BIO-BOT-2: Special-status Perennial Plants and Other Species. In addition, mitigation strategies such as special-status plant species restoration are addressed in APM BIO-RES-1: Develop and Implement Habitat Restoration and Revegetation Plan (HRRP) and reduction of weed competition with special-status plant species in APM BIO-RES-2: Develop Invasive Plant Management Plan. Implementation of APM WET-1: Avoid and/or Minimize Impacts to Waters and Wetlands, would ensure minimization of impacts to special-status natural communities occurring in wetlands and riparian areas. With the implementation of these APMs, impacts to sensitive natural communities would be less than significant.

*5.4.4.1.2.2 Operation*

**Less Than Significant with Mitigation.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included in the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project. Modifications of or impacts to sensitive natural communities are not anticipated to occur due to O&M activities, and therefore no impacts would be realized under this criterion during operations and maintenance.

#### 5.4.4.1.3 Would the project have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means?

*5.4.4.1.3.1 Construction*

**Less Than Significant Impact with Mitigation.** During the initial design of the GKR Project, SCE has sited structures and located and oriented construction work areas to avoid state and federal jurisdictional waters and wetlands to the extent feasible.

However, construction of the GKR Project would result in temporary and permanent impacts to state and federal jurisdictional wetlands and waters. Temporary impacts would occur during the removal of existing subtransmission structures that are located in jurisdictional wetlands and waters, during installation of replacement structures (if such features cannot be avoided), and during the establishment of temporary construction areas such as pulling and tensioning sites. Permanent impacts to jurisdictional wetlands and waters would occur during rehabilitation/upgrading of existing access and spur roads that are routed through jurisdictional waters (which may include widening the existing access and spur roads to meet SCE's access road standards for construction), and from the unavoidable installation of replacement subtransmission structures in wetlands and waters.

Temporary impacts within vegetated jurisdictional features are likely to result from overland travel, equipment staging, material laydown, foot traffic, structure replacement, etc. At locations where overland travel methods are implemented, revegetation would be unnecessary because overland travel would preserve the root mass of existing woody vegetation to allow crown re-sprouting to occur. Temporarily disturbed areas where more than overland travel is planned would be restored through a combination of site re-contouring, topsoil salvage and replacement (which allows natural recruitment reseeding), and where necessary, revegetation. Recontouring would restore preexisting hydrological function to the system while topsoil salvage would allow for reestablishment of the preexisting, naturally occurring seed bank.

Temporary impacts to riparian vegetation under the jurisdiction of CDFW would occur during the removal of existing subtransmission structures that are located in CDFW jurisdictional waters, during installation of replacement structures (if such features cannot be avoided), and during the establishment of temporary construction areas such as pulling and tensioning sites. Permanent impacts to riparian vegetation under the jurisdiction of CDFW would occur during rehabilitation/upgrading of existing access and spur roads that are currently routed through CDFW jurisdictional waters (which may include widening the existing access and spur roads to meet SCEs standards for construction), and from the unavoidable installation of replacement subtransmission structures in CDFW jurisdictional waters.

The extent of temporary and permanent impacts to jurisdictional areas is presented in Table 5.4-8.

**Table 5.4-8. Jurisdictional Waters Impacts**

| Feature | Number of Features | Temporary Impacts | | Permanent Impacts | |
|---|---|---|---|---|---|
| | | Acres | Features | Acres | Features |
| 404 wetlands | 24 | 16.5 | 18 | 2.9 | 12 |
| 404 other waters | 69 | 2.7 | 47 | 0.1 | 14 |
| CDFW 1602 | 69 | 6.7 | 49 | 0.3 | 18 |
| **Total** | **162** | **25.9** | **114** | **3.3** | **44** |

SCE would obtain all necessary permits and authorizations, including those from the USACE, RWQCB, and CDFW prior to construction. SCE would comply with all conditions of approval identified in permits and authorizations. Further, SCE would develop and implement one or more project-specific SWPPPs that would include BMPs to prevent erosion and sedimentation into wetlands and streams and that would protect water quality during construction. Compliance with such typical conditions is reflected in the measures contained in APM WET-1; through implementation of this APM, SCE would avoid or minimize impacts to all state and federally jurisdictional waters, wetlands, and riparian habit by siting activities outside these areas, implementing appropriate BMPs, mitigating for permanent impacts, and performing restoration for temporary impacts. With the implementation of APM WET-1, implementation of the project-specific SWPPP, and compliance with permits and authorizations issued for the project, impacts on jurisdictional waters would be less than significant.

*5.4.4.1.3.2 Operation*

**Less Than Significant Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included in the GKR Project; no material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project.

O&M activities typically do not impact water quality or result in discharges to waters, as ground-disturbing activities are not usually required for O&M. However, if ground disturbance would be necessary, BMPs would be implemented to protect resources from any discharges, and affected areas would be restored to pre-disturbance conditions. With the implementation of BMPs and the restoration of affected areas to pre-disturbance conditions, O&M activities are not expected to result in the impact of federally protected waters and drainages. In addition, if it is necessary to conduct any work within a channel or to remove riparian vegetation, the work would require approval from the USACE, RWQCB or CDFW as well as adherence to any permit conditions associated with that approval. Therefore, impacts would be less than significant.

#### 5.4.4.1.4 Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridor, or impede the use of native wildlife nursery sites?

*5.4.4.1.4.1 Construction*

**Less Than Significant Impact.** There are no special-status fish within the GKR Project alignment. Furthermore, no in-water work is included in the GKR Project; therefore, no fish or special-status aquatic species will be affected by Project activities.

Replacement subtransmission structures would be installed proximate to existing subtransmission structures, or in new alignments adjacent to the existing subtransmission line alignments. Due to the small cross-section of replacement structures, replacement structures themselves would not interfere with the movement of any species or corridor, and no structures are located on a known native wildlife nursery site. Construction activities would be temporary and would affect only small, geographically-dispersed areas at any one time; these construction activities would not interfere substantially with the movement of any wildlife species, although construction activities may interfere with the movement of individual animals. Therefore, impacts to movement of special-status wildlife would be less than significant.

*5.4.4.1.4.2 Operation*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included in the GKR Project. Given the periodic but infrequent nature of these continuing operations, no impacts would occur under this criterion.

#### 5.4.4.1.5 Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

*5.4.4.1.5.1 Construction*

**Less than Significant Impact.** As presented above, the Kern County General Plan and Los Angeles County General Plan both contain policies intended to protect biological resources, including sensitive natural communities, special status species, riparian habitat and wetlands, and wildlife corridors and to protect against the spread or introduction of noxious weed species. Implementation of the APMs described above would ensure the protection of the resources identified in the Kern County and Los Angeles County General Plans or the minimization of impacts to said resources, and thus less than significant impacts would be realized under this criterion.

A portion of Segment 3 that traverses Los Angeles County lies within a Significant Ecological Area (SEA-17, the San Andreas SEA). SEAs have been designated in Los Angeles County to identify lands with important biological resources representing the biodiversity of the County. The Ordinance establishes permitting requirements, development standards, and review processes for development within SEAs. Los Angeles County Code Section 22.102.040 Subsection O exempts utilities from, relevantly, obtaining a Level II (discretionary) Protected Tree Permit, obtaining compliance with the for "emergency or routine maintenance necessary to protect or maintain essential components of an existing transmission system" from, relevantly, obtaining a Level II (discretionary) Protected Tree Permit, obtaining a conditional use permit, or being subject to a Ministerial SEA Review. Therefore, the GKR Project would not conflict with the Ordinance established to protect the biological resources represented by SEAs, and a less than significant impact would be realized.

*5.4.4.1.5.2 Operation*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included in the GKR Project. Given the periodic but infrequent nature of these continuing operations, no new impacts would occur under this criterion.

#### 5.4.4.1.6 Would the project conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan?

*5.4.4.1.6.1 Construction*

**Less than Significant Impact.** There are no NCCPs that overlap the GKR Project alignment. Approximately 9.5 miles of the northern portion of Segment 1 of the GKR Project alignment overlaps the MBHCP area. The "Covered Activities" under the MBHCP include any activities for which an urban development permit (e.g., grading permit) results in urban development. Urban development means a change in land use from open land to any other land use for which a permit is required. Because the GKR Project will not result in a change in land use, it is not subject to the MBHCP.

That notwithstanding, of the species covered under the MBHCP, only the Tipton kangaroo rat and blunt nosed leopard lizard may be found along the GKR Project alignment within the MBHCP area. The provisions in the Plan that are associated with the Tipton kangaroo rat are applicable only in what is termed the 'Conceptual Southwest Focus Area.' The GKR Project alignment is not located in this Area, and therefore the GKR Project would not conflict with the provisions in the MBHCP associated with Tipton kangaroo rat.

As described in Section 5.4.4.1.1 above, impacts to the blunt nosed leopard lizard would be avoided through implementation of APM BIO-HERP-7: Blunt-nosed Leopard Lizard in suitable habitat for this species. Therefore the GKR Project would not conflict with the provisions of the MBHCP associated with the blunt nosed leopard lizard, and a less than significant impact would be realized under this criterion.

*5.4.4.1.6.2 Operations*

**Less than Significant Impact.** Approximately 9.5 miles of the northern portion of Segment 1 of the GKR Project alignment overlaps the MBHCP area. The "Covered Activities" under the MBHCP include any activities for which an urban development permit (e.g., grading permit) results in urban development. Urban development means a change in land use from open land to any other land use for which a permit is required. Because the GKR Project will not result in a change in land use, it is not subject to the MBHCP.

That notwithstanding, of the species covered under the MBHCP, only the Tipton kangaroo rat and blunt nosed leopard lizard may be found along the GKR Project alignment within the MBHCP area. The provisions in the Plan that are associated with the Tipton kangaroo rat are applicable only in what is termed the 'Conceptual Southwest Focus Area.' The GKR Project alignment is not located in this Area, and therefore the GKR Project would not conflict with the provisions in the MBHCP associated with Tipton kangaroo rat.

As described in Section 5.4.4.1.1 above, impacts to the blunt nosed leopard lizard would be avoided through implementation of APM BIO-HERP-7: Blunt-nosed Leopard Lizard in suitable habitat for this species. Therefore, the GKR Project would not conflict with the provisions of the MBHCP associated with the blunt nosed leopard lizard, and a less than significant impact would be realized under this criterion.

#### 5.4.4.1.7 Would the project create a substantial collision or electrocution risk for birds or bats?

*5.4.4.1.7.1 Construction*

**Less than Significant Impact.** The GKR Project will introduce into the environment, temporarily, construction equipment that, by its presence and use, could present a collision risk for birds or bats; such equipment would not create any electrocution risk. Because construction equipment is large, solid, generally non-static, and highly visible, the collision risk for birds or bats is anticipated to be very low; therefore, a less than significant impact would occur under this criterion.

*5.4.4.1.7.2 Operations*

**Less than Significant Impact.** As presented in APM BIO-AVI-5, all subtransmission and substation facilities for the project will be designed to be avian-safe, following the intent of Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006 (APLIC 2006). All subtransmission facilities will be evaluated for potential collision risk and, where determined to be high risk, lines will be marked with collision reduction devices in accordance with Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012). Therefore, the GKR Project is not anticipated to present a substantial collision or electrocution risk for birds or bats, and impacts would be less than significant.

### *5.4.4.2 Quantify Habitat Impacts*

Habitat impacts quantified for the GKR Project alignment are presented in Table 5.4-2 in Section 5.4.1.3.

### *5.4.4.3 Special-Status Species Impacts*

Impacts to special-status species are addressed in Section 5.4.4.1.1 above.

#### *5.4.4.4 Wetland Impacts*

Impacts to wetlands are addressed in Section 5.4.4.3 above.

#### *5.4.4.5 Avian Impacts*

Impacts to avian species are addressed above.

### 5.4.5 CPUC Draft Environmental Measures

The CPUC has not identified any draft environmental measures.


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

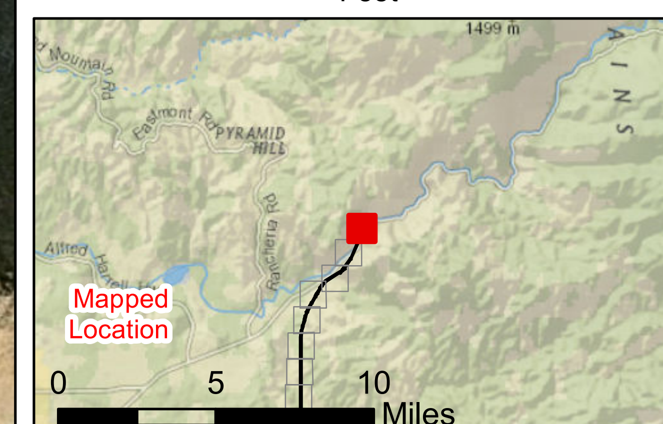
N

LEGEND

- STRUCTURE LOCATION
- SUBSTATION LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
**5.4-1**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

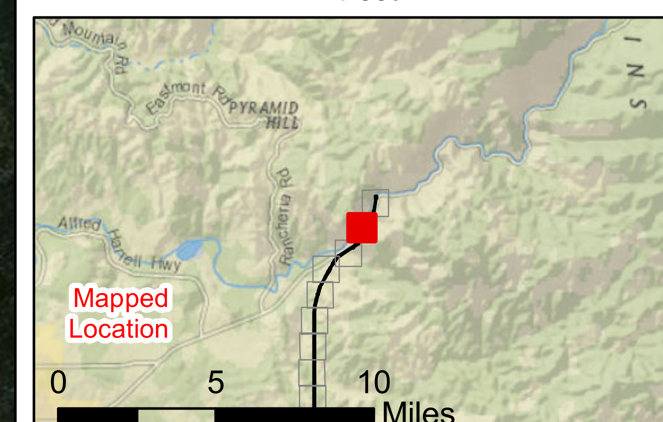
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



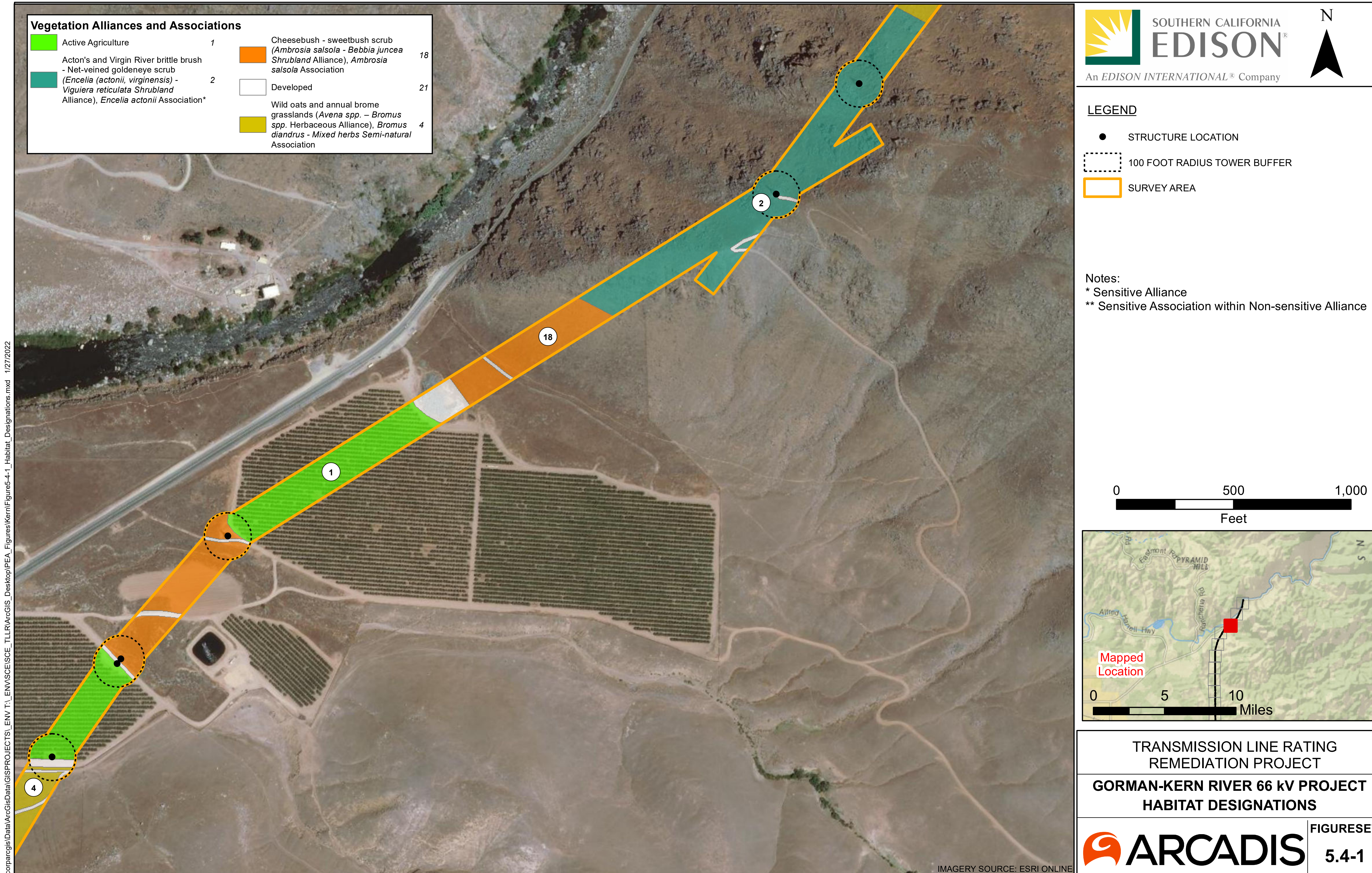

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

**FIGURESET 5.4-1**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022

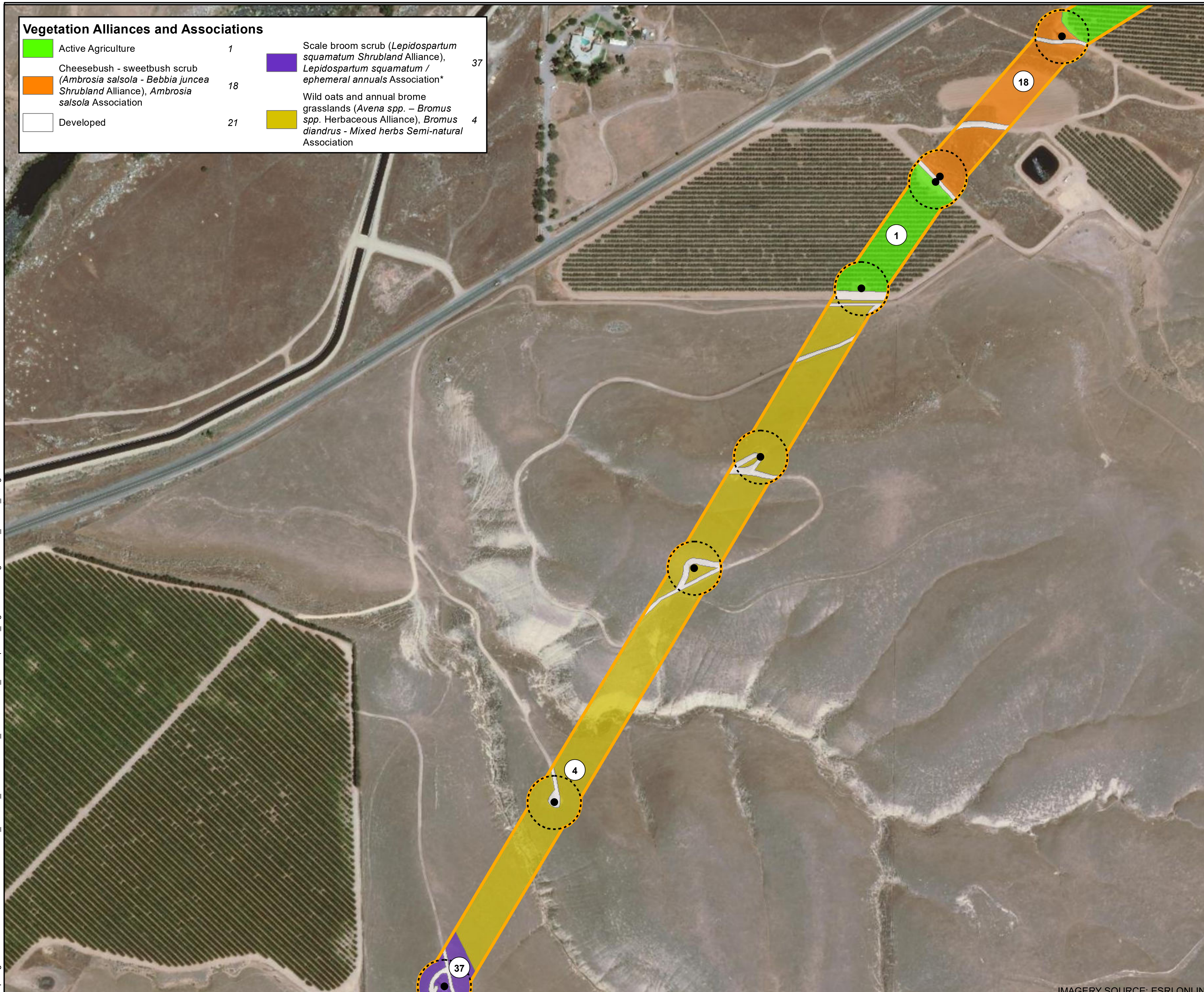



TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

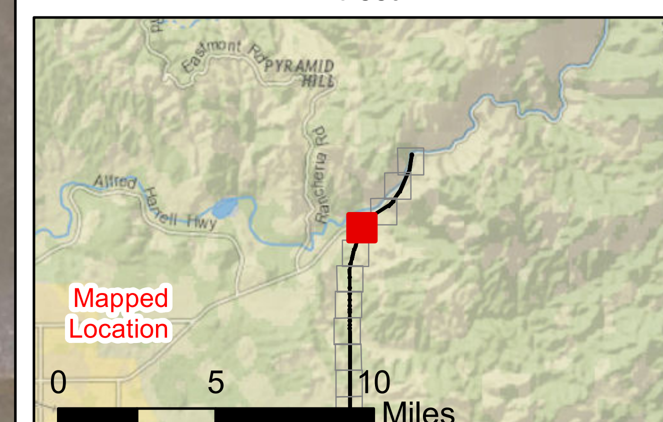
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
**5.4-1**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

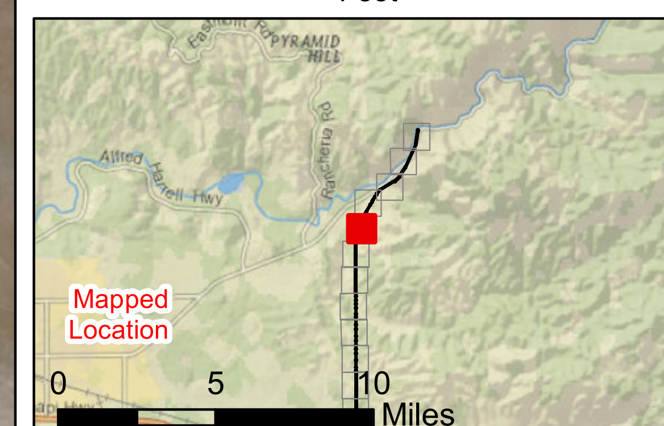
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



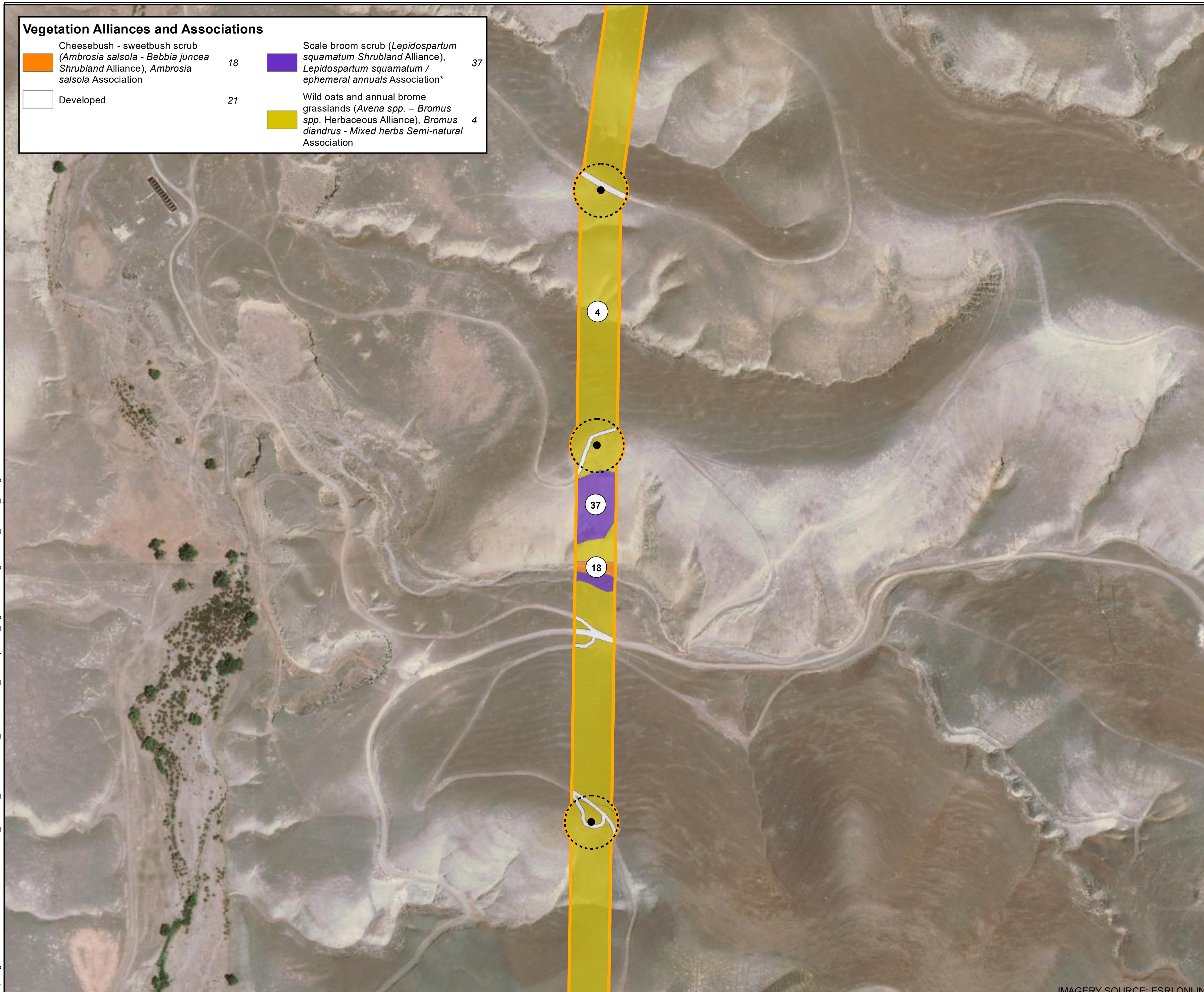

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
**5.4-1**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An *EDISON INTERNATIONAL*® Company

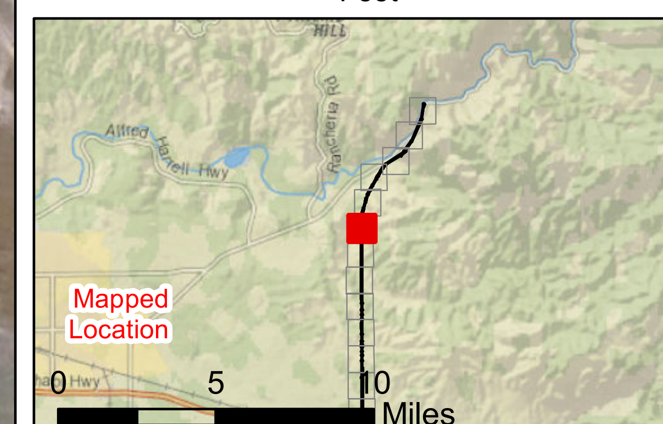
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet

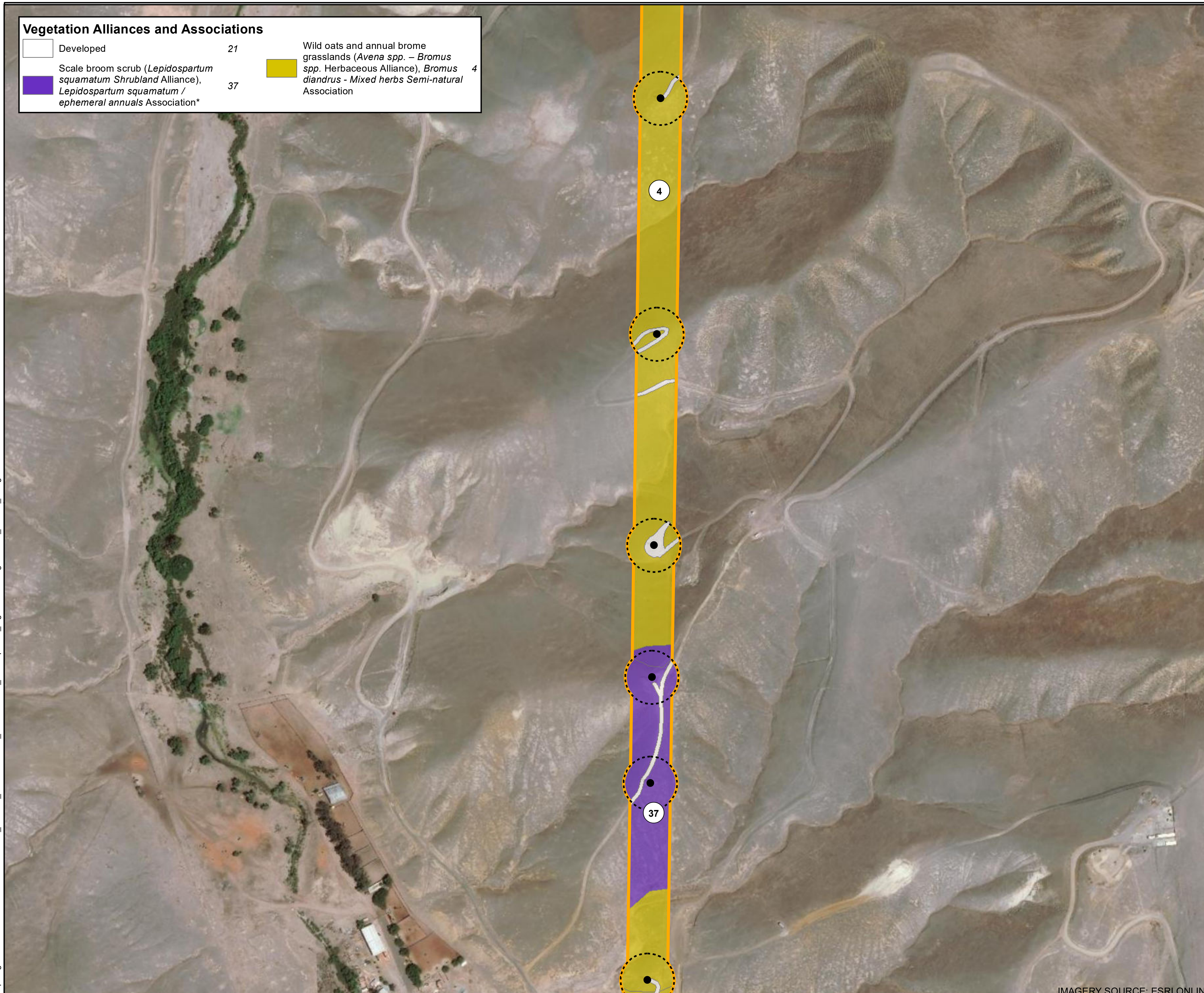



TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

**FIGURESET**
**5.4-1**




SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

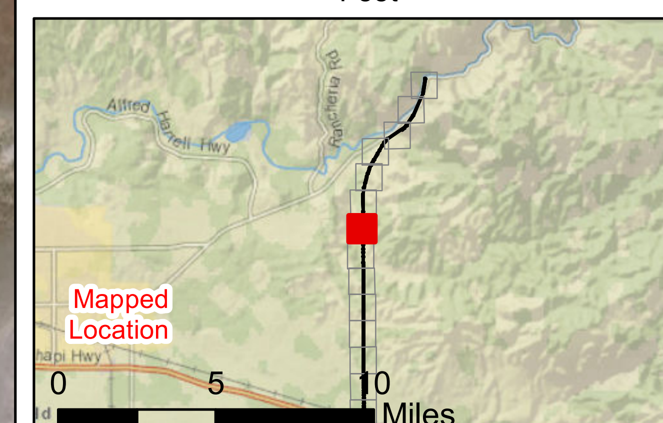
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

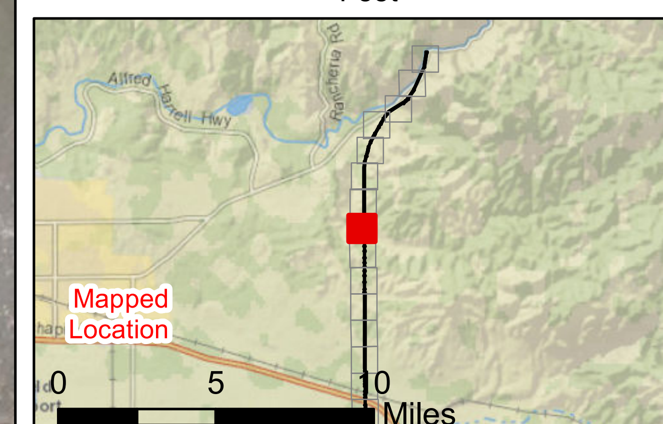
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

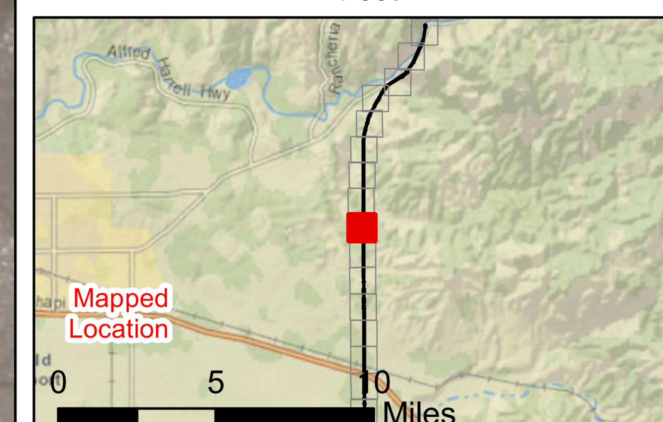
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

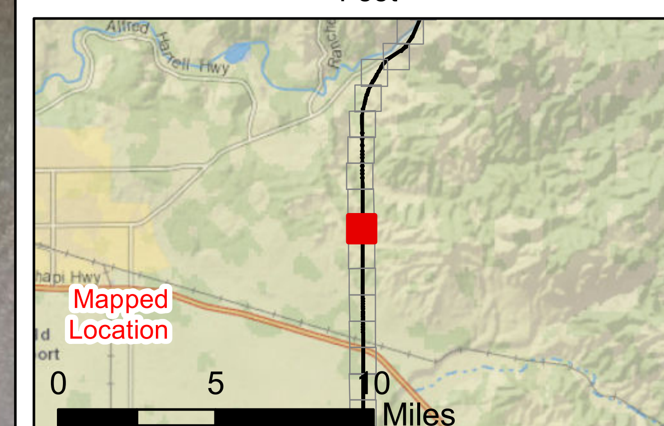
N

LEGEND

STRUCTURE LOCATION
100 FOOT RADIUS TOWER BUFFER
SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

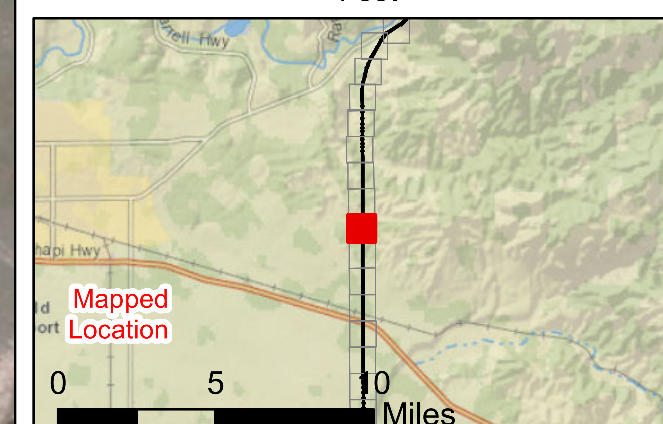
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



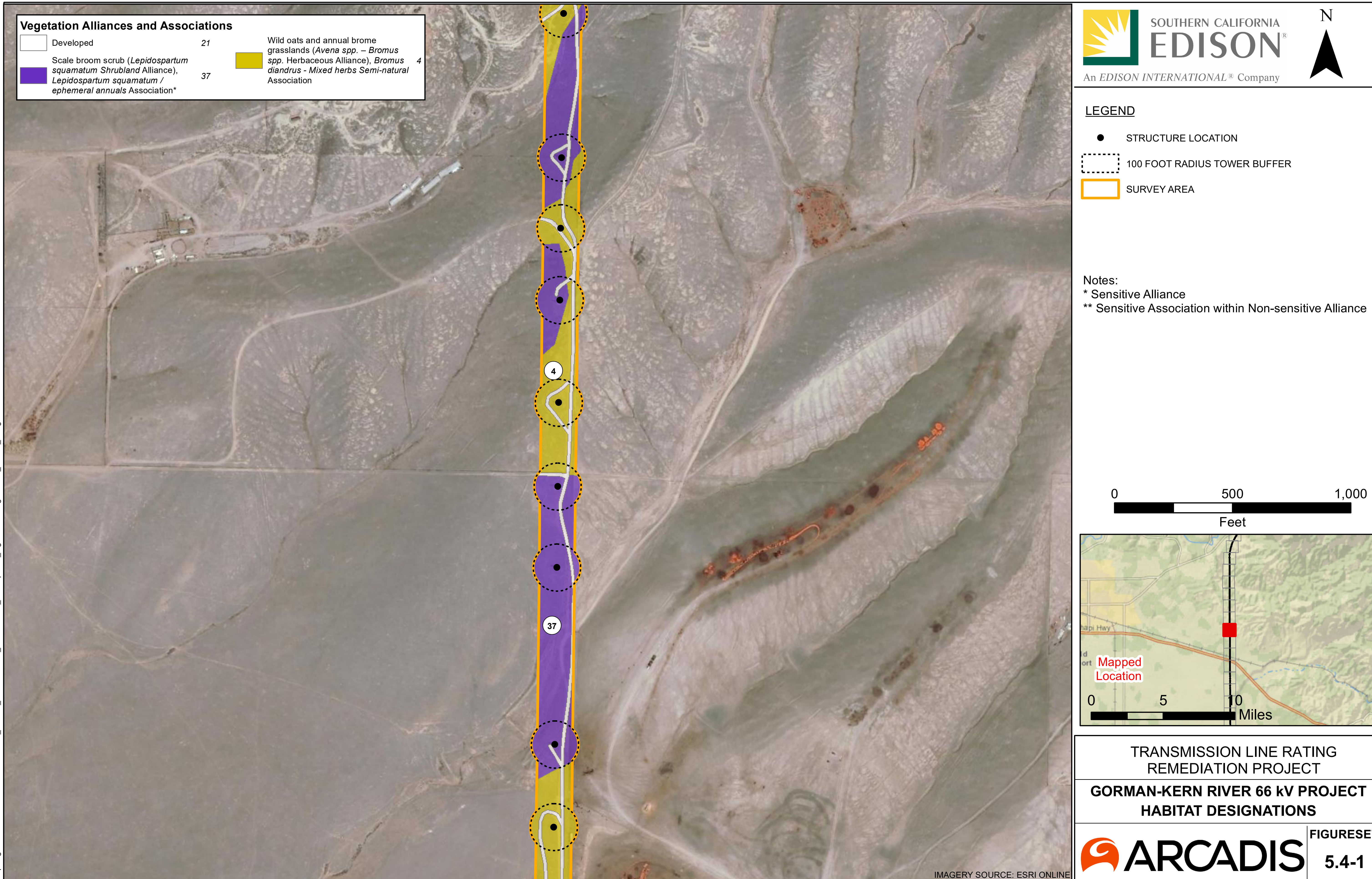

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

**FIGURESET**
**5.4-1**

\\coparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022



Vegetation Alliances and Associations
Developed 21
Scale broom scrub (Lepidospartum squamatum Shrubland Alliance), Lepidospartum squamatum / ephemeral annuals Association* 37
Wild oats and annual brome grasslands (Avena spp. – Bromus spp. Herbaceous Alliance), Bromus diandrus - Mixed herbs Semi-natural Association 4
4
37
IMAGERY SOURCE: ESRI ONLINE
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company
N
LEGEND
STRUCTURE LOCATION
100 FOOT RADIUS TOWER BUFFER
SURVEY AREA
Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance
0 500 1,000
Feet
Mapped Location
0 5 10 Miles
TRANSMISSION LINE RATING REMEDIATION PROJECT
GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS
ARCADIS
FIGURESET 5.4-1
\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

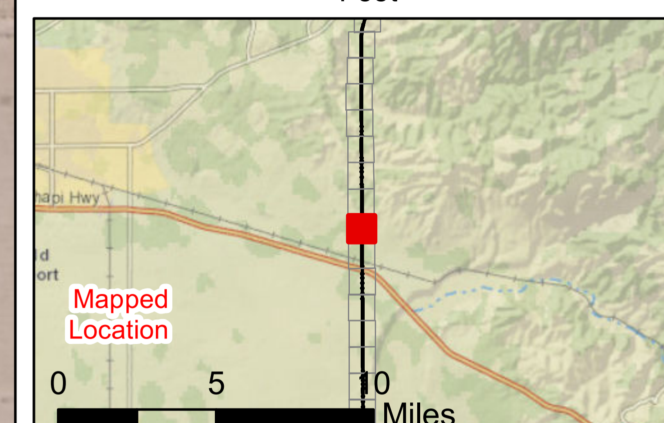
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\coparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

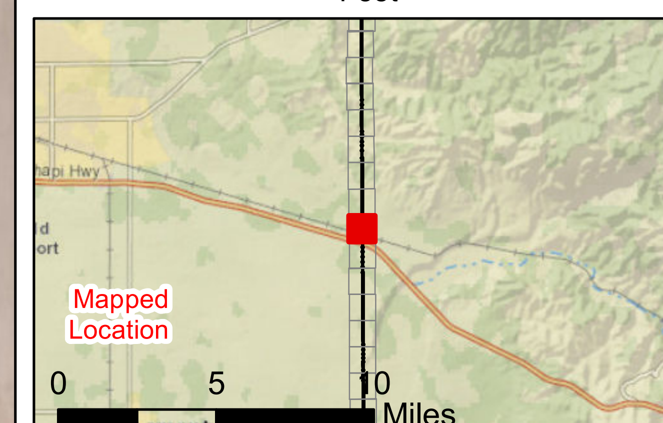
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



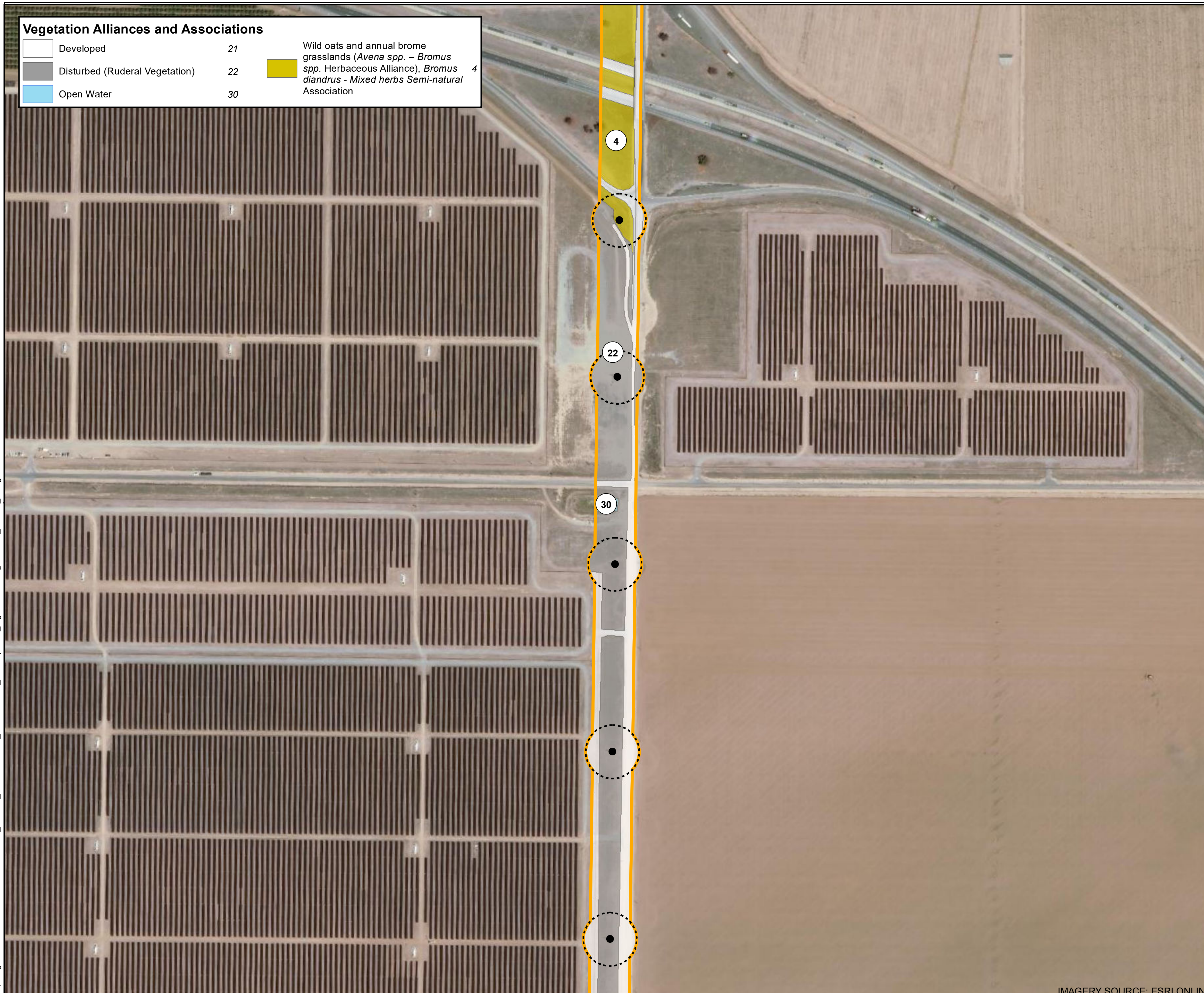

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

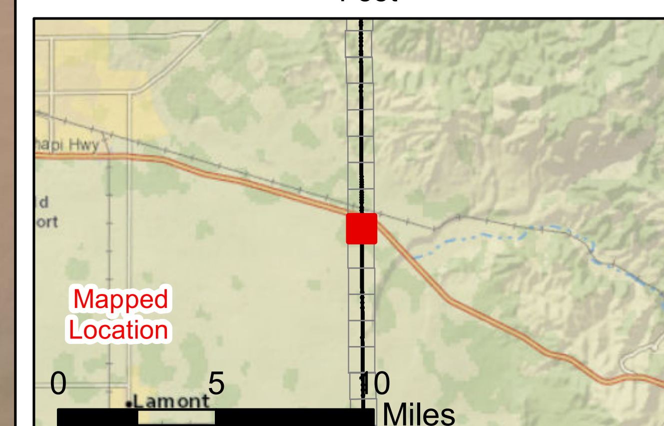
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



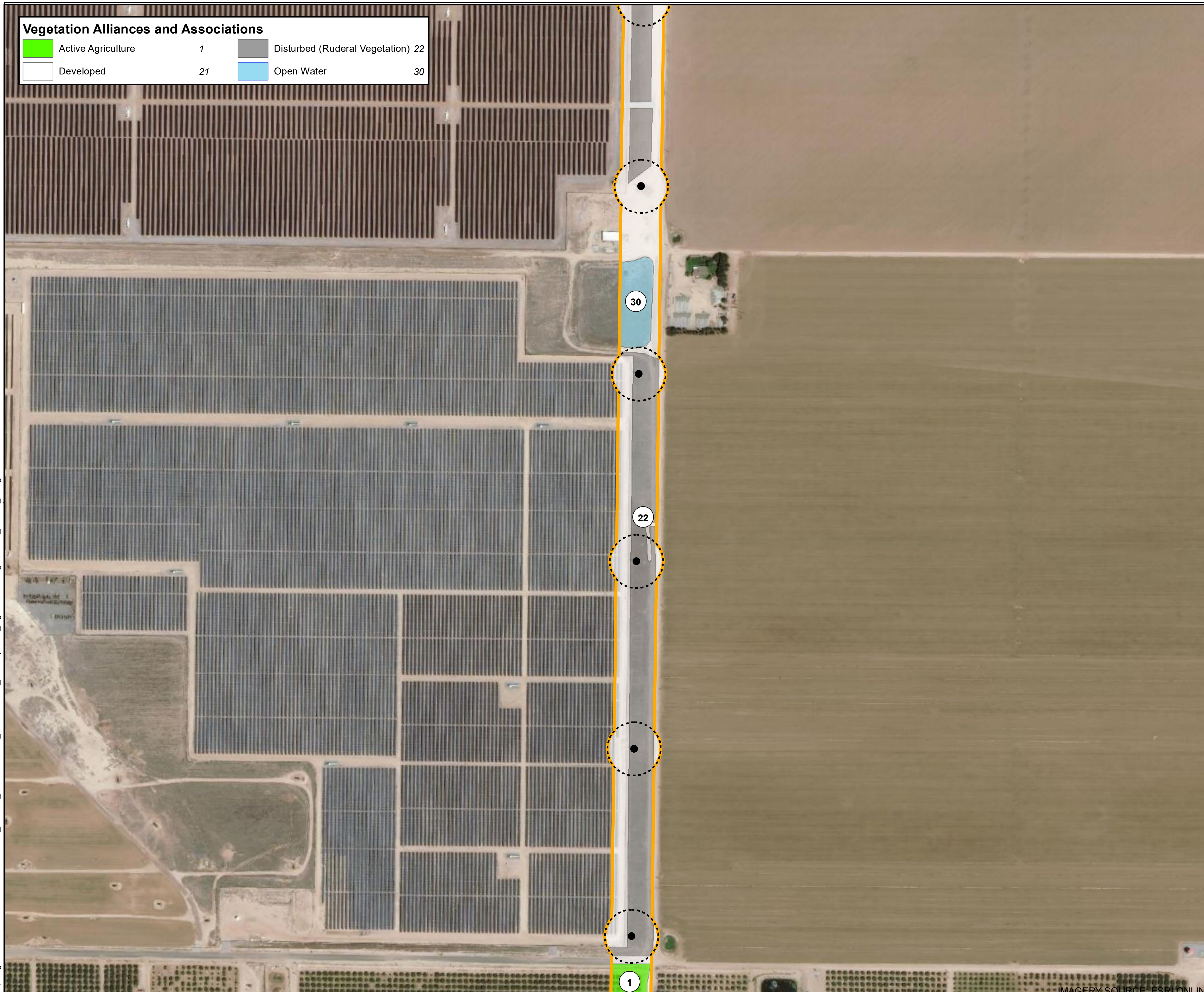

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet

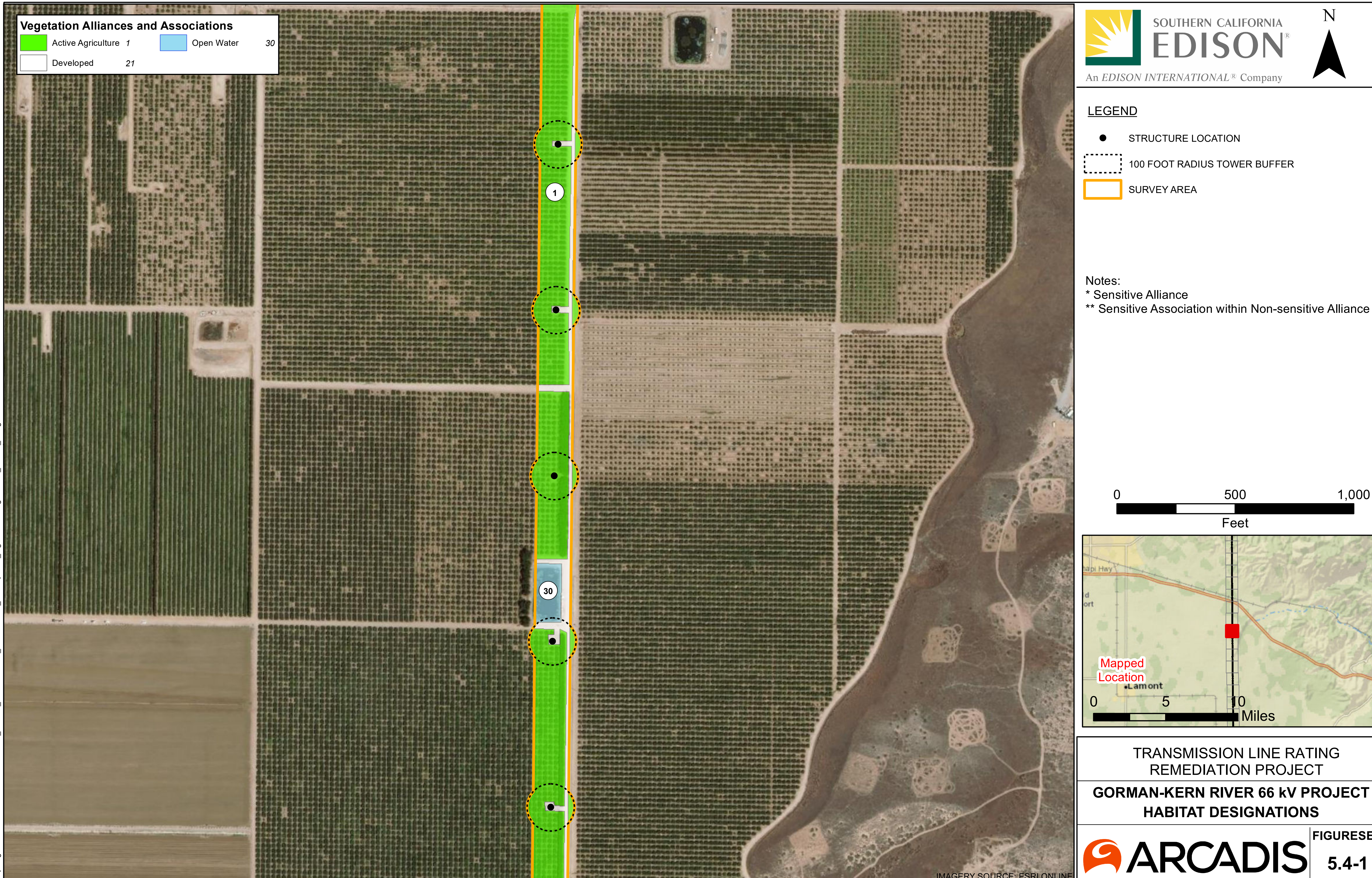

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022



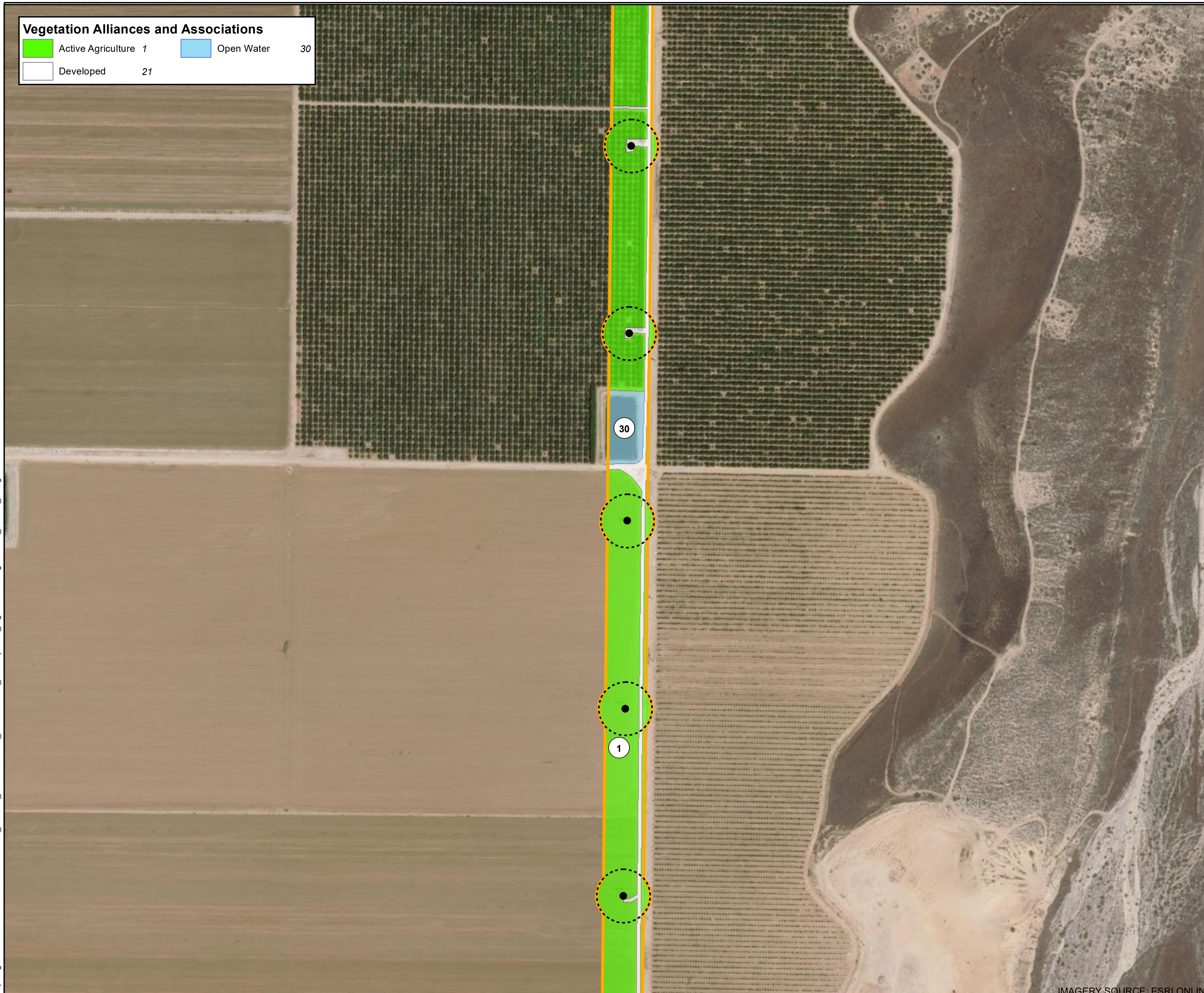

TRANSMISSION LINE RATING REMEDIATION PROJECT

GORMAN-KERN RIVER 66 kV PROJECT
HABITAT DESIGNATIONS

ARCADIS

FIGURESET 5.4-1

\\coparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet

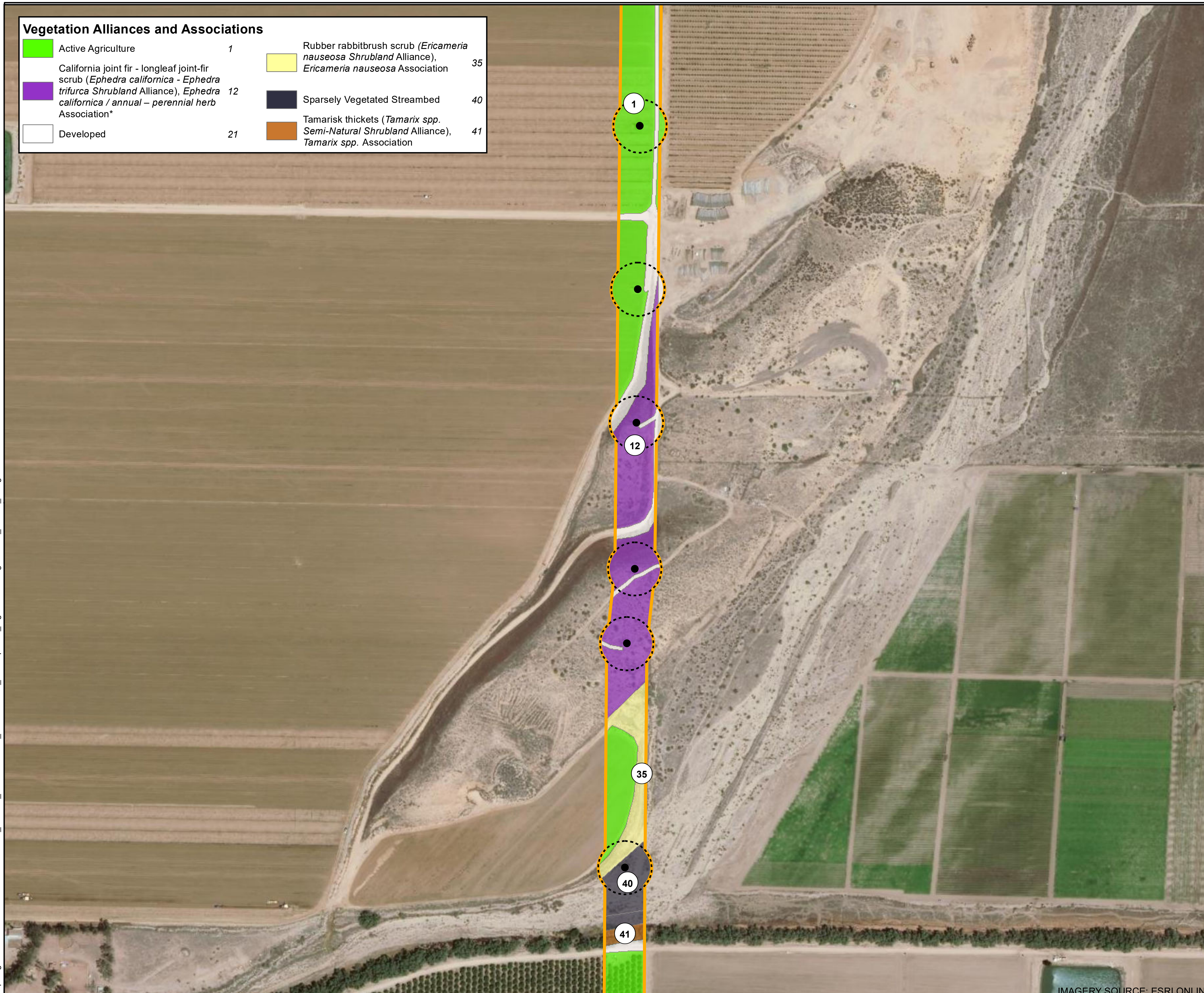

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet

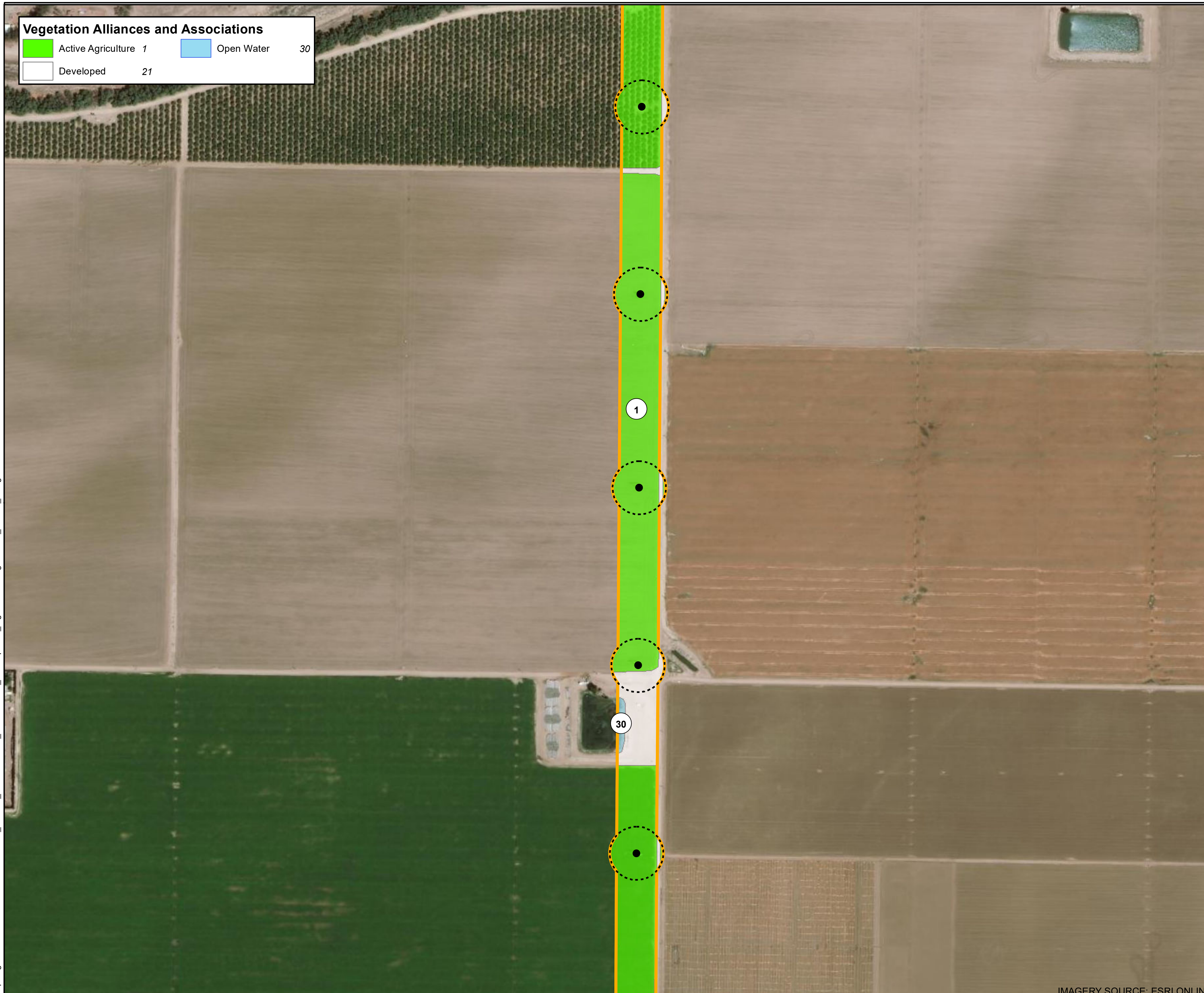

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

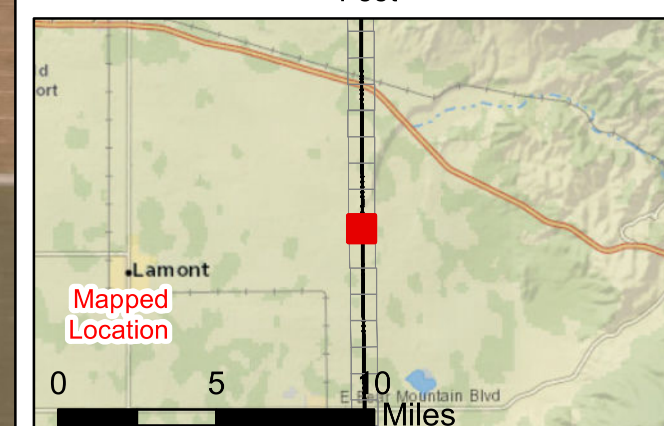
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



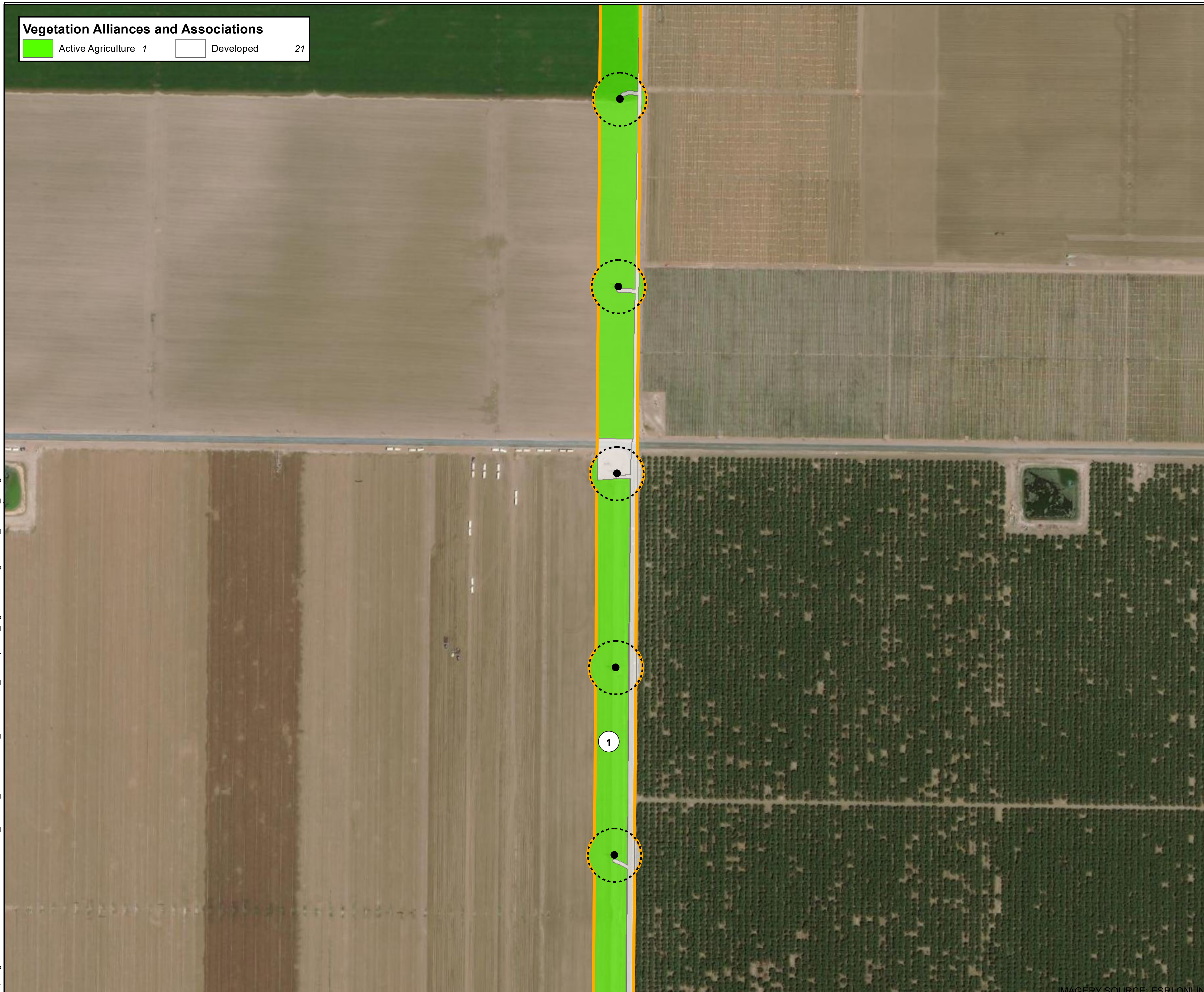

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

**FIGURESET**
**5.4-1**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

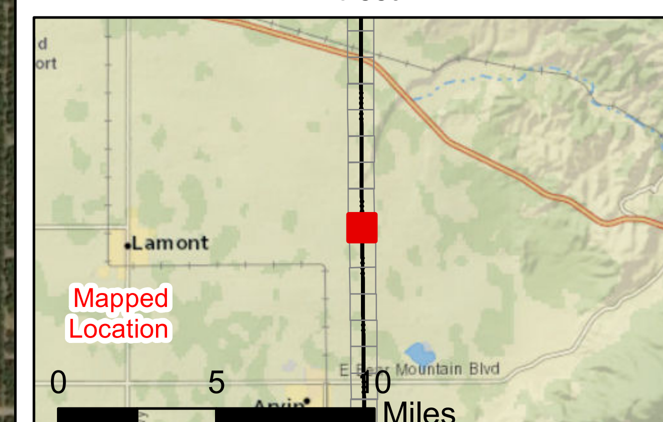
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



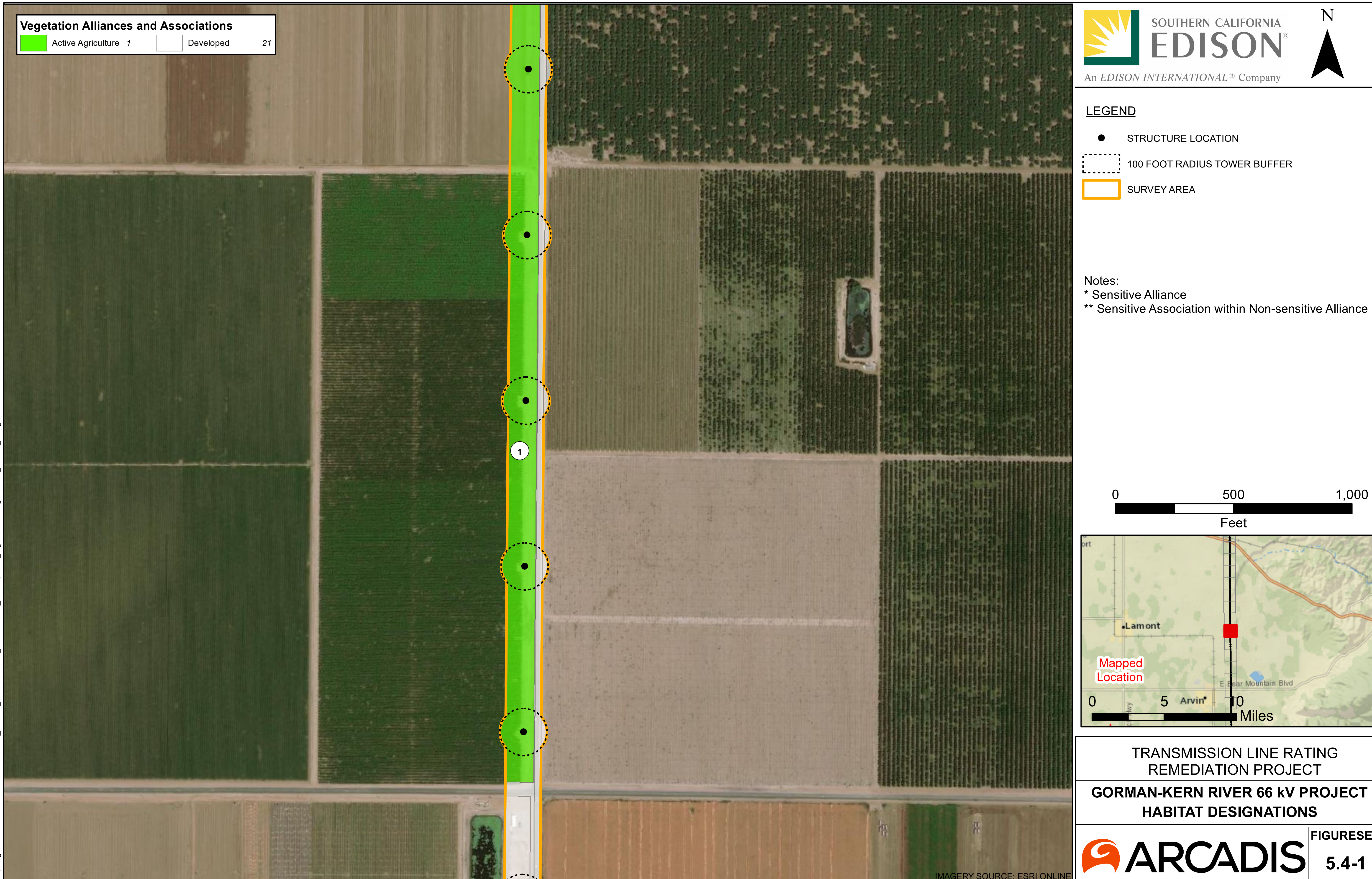

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022

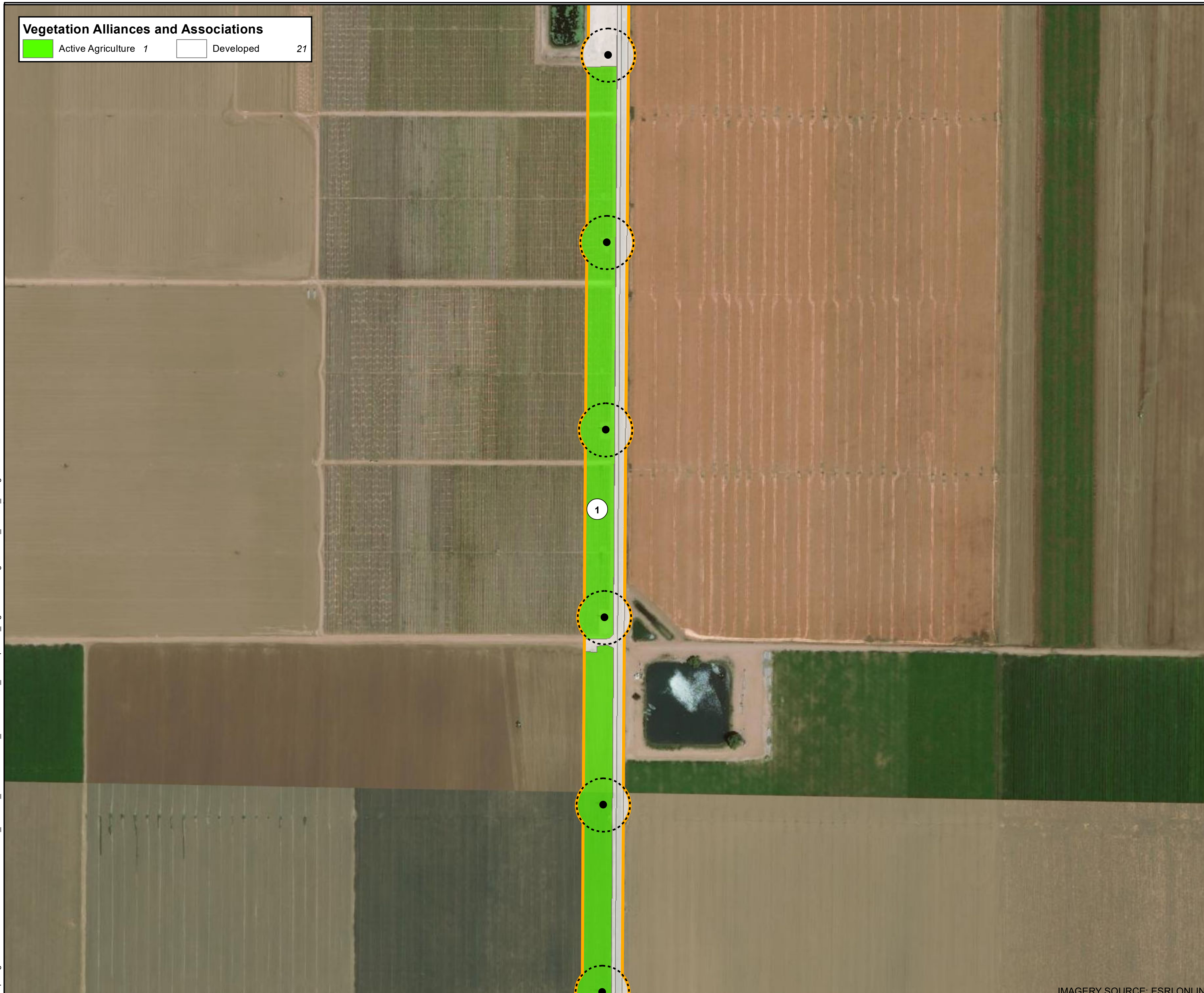



TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

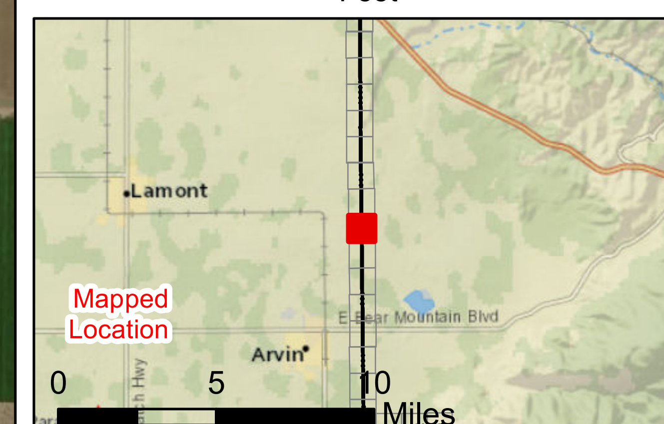
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



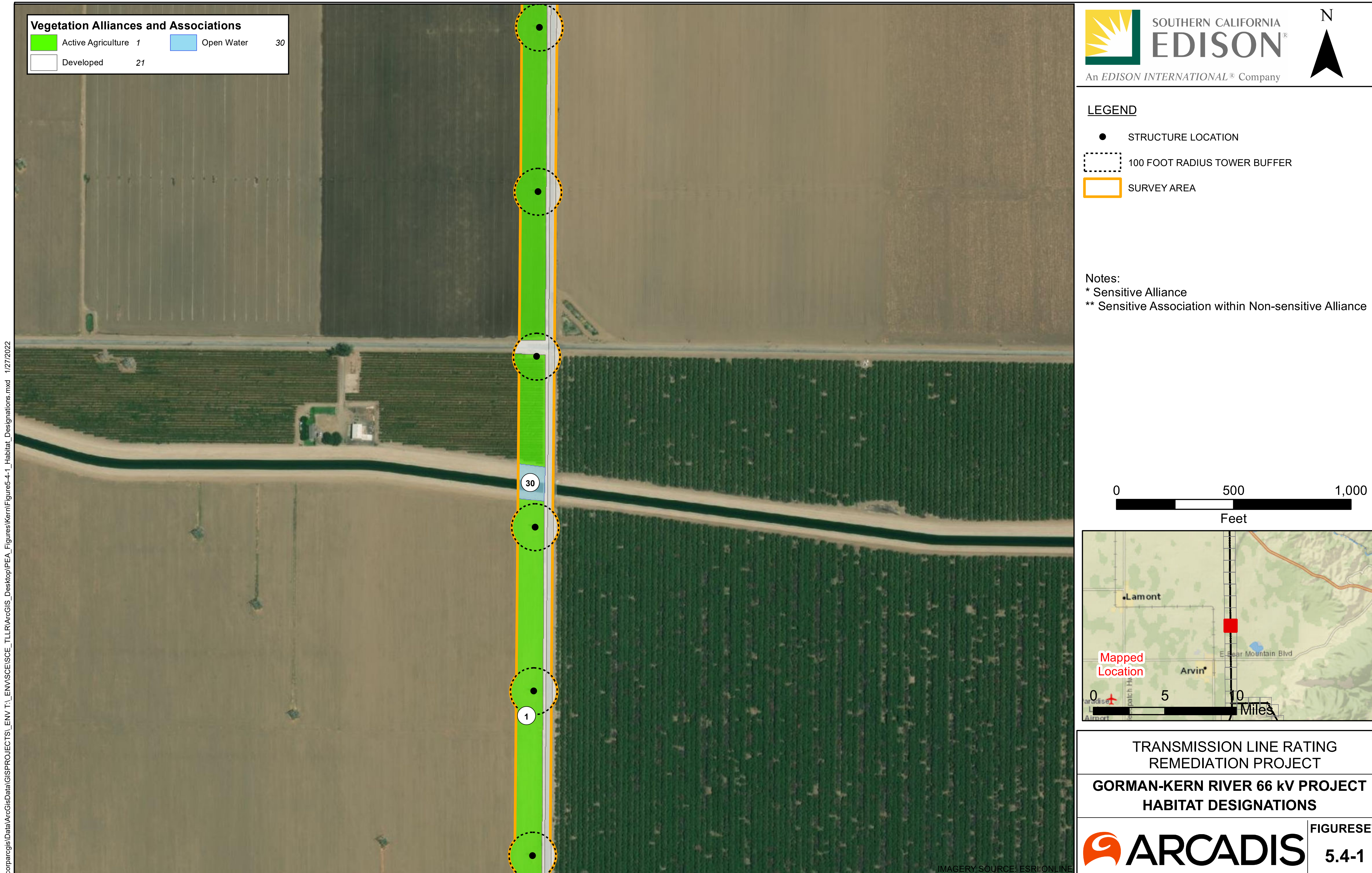

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

**FIGURESET 5.4-1**


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

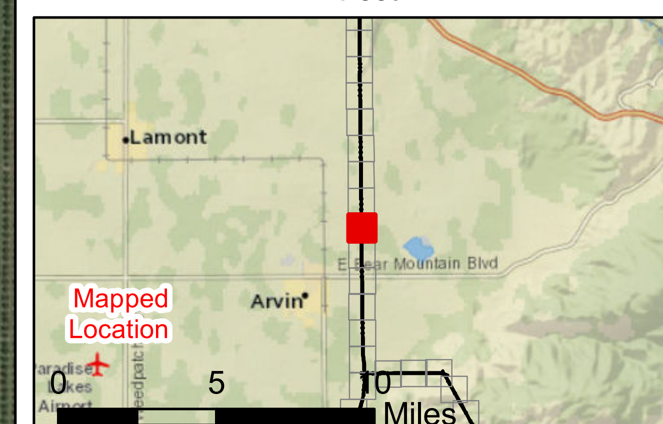
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



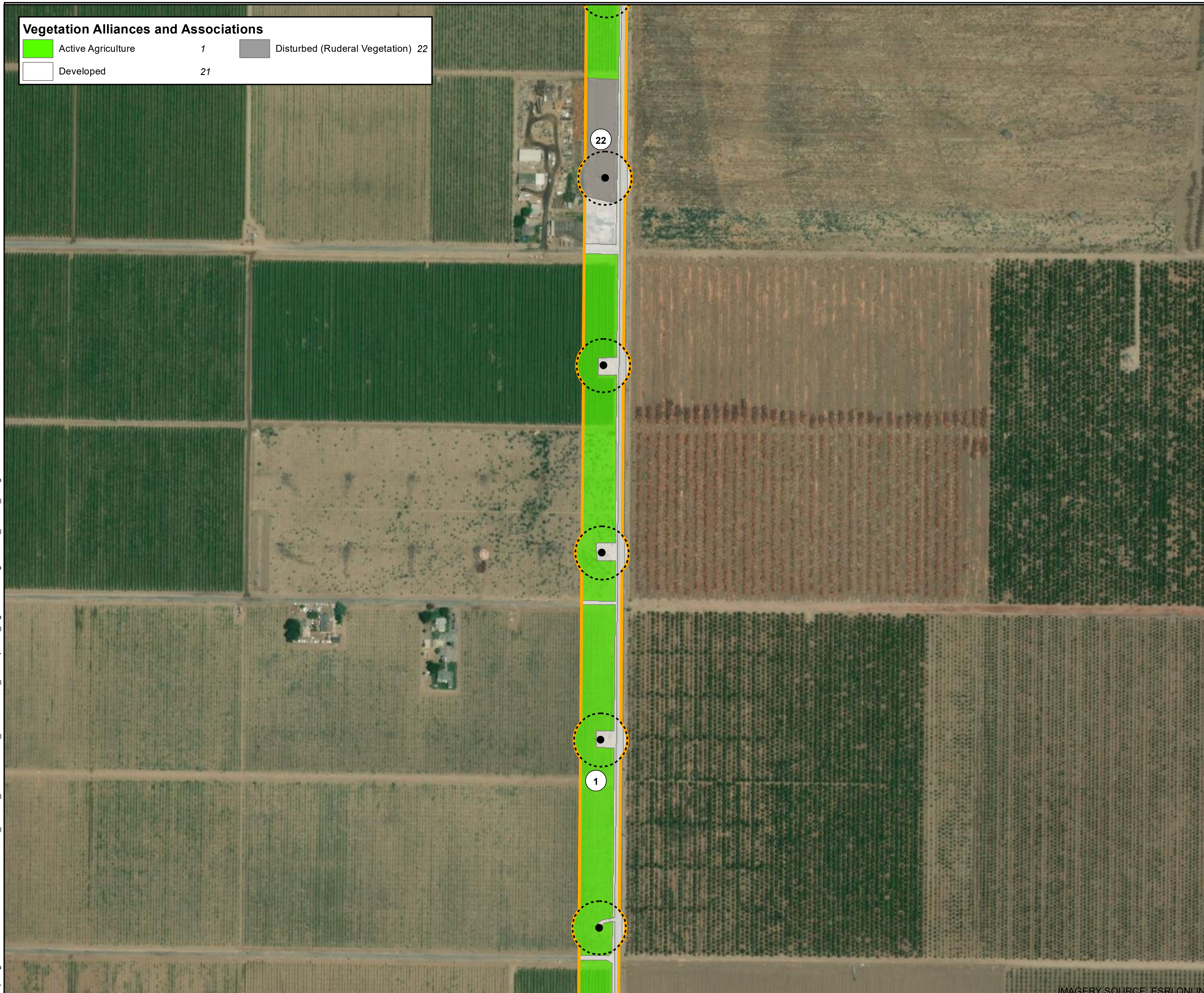

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1

\\coparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

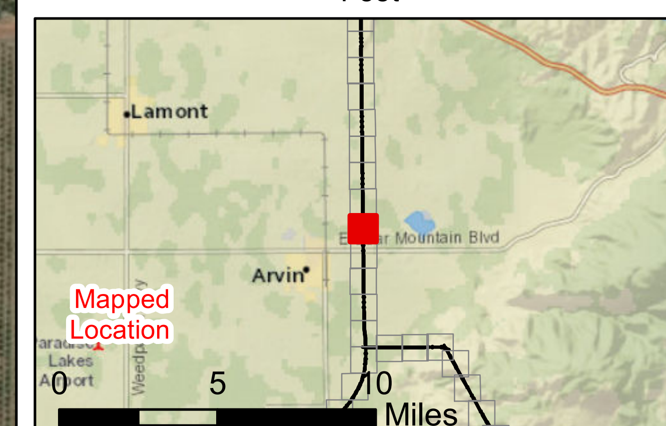
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



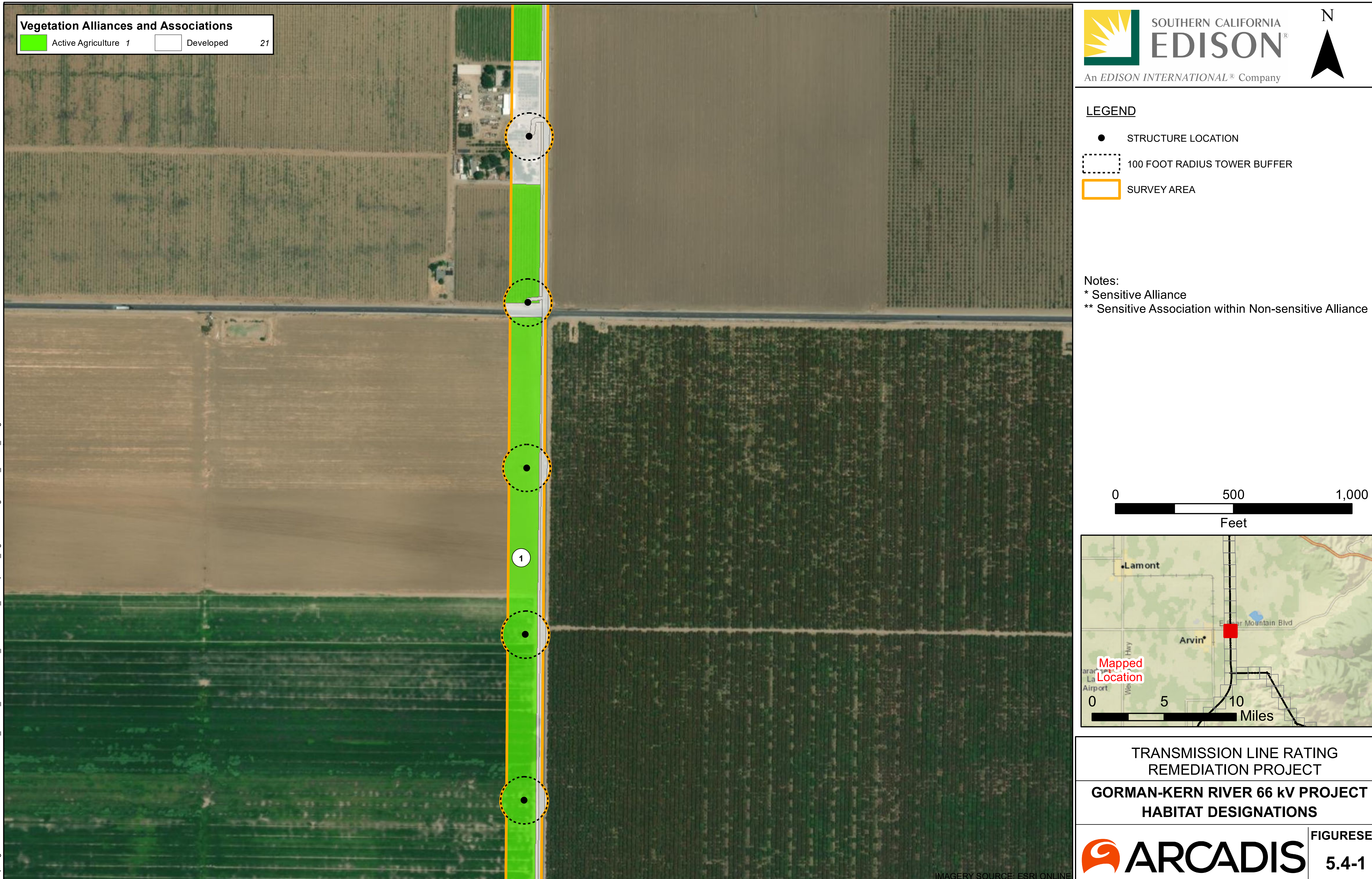

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

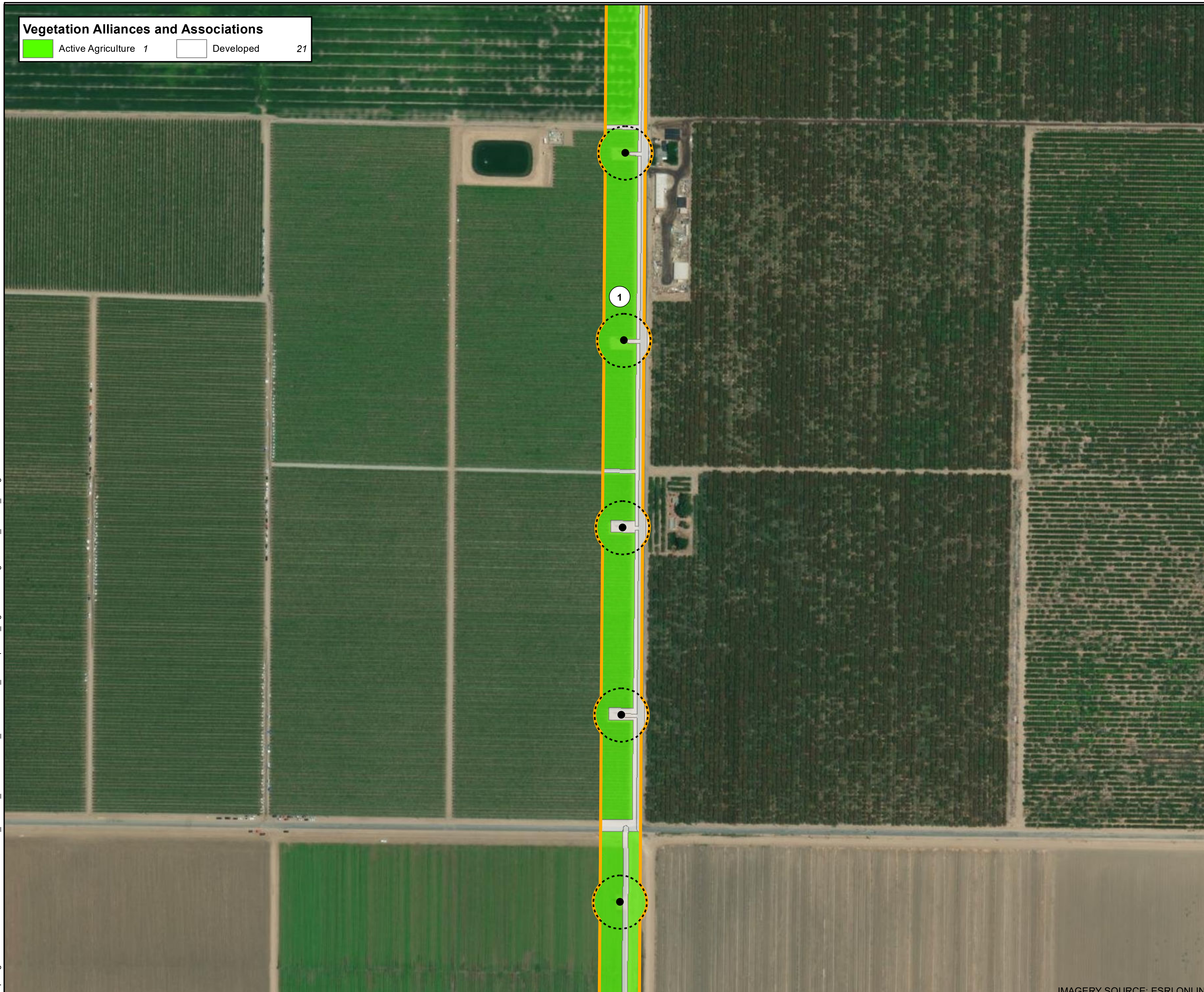
ARCADIS

FIGURESET
5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




\\coparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

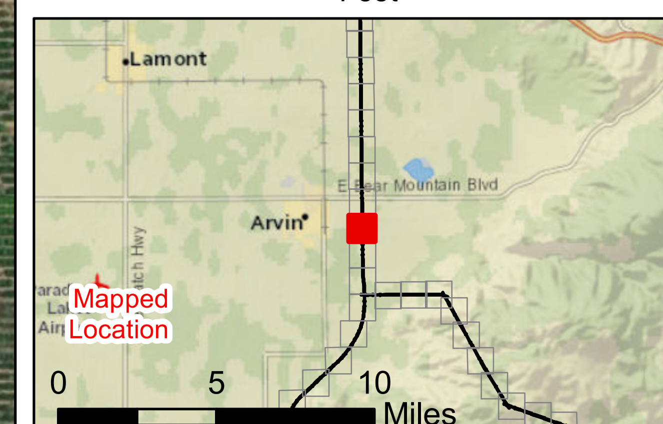
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



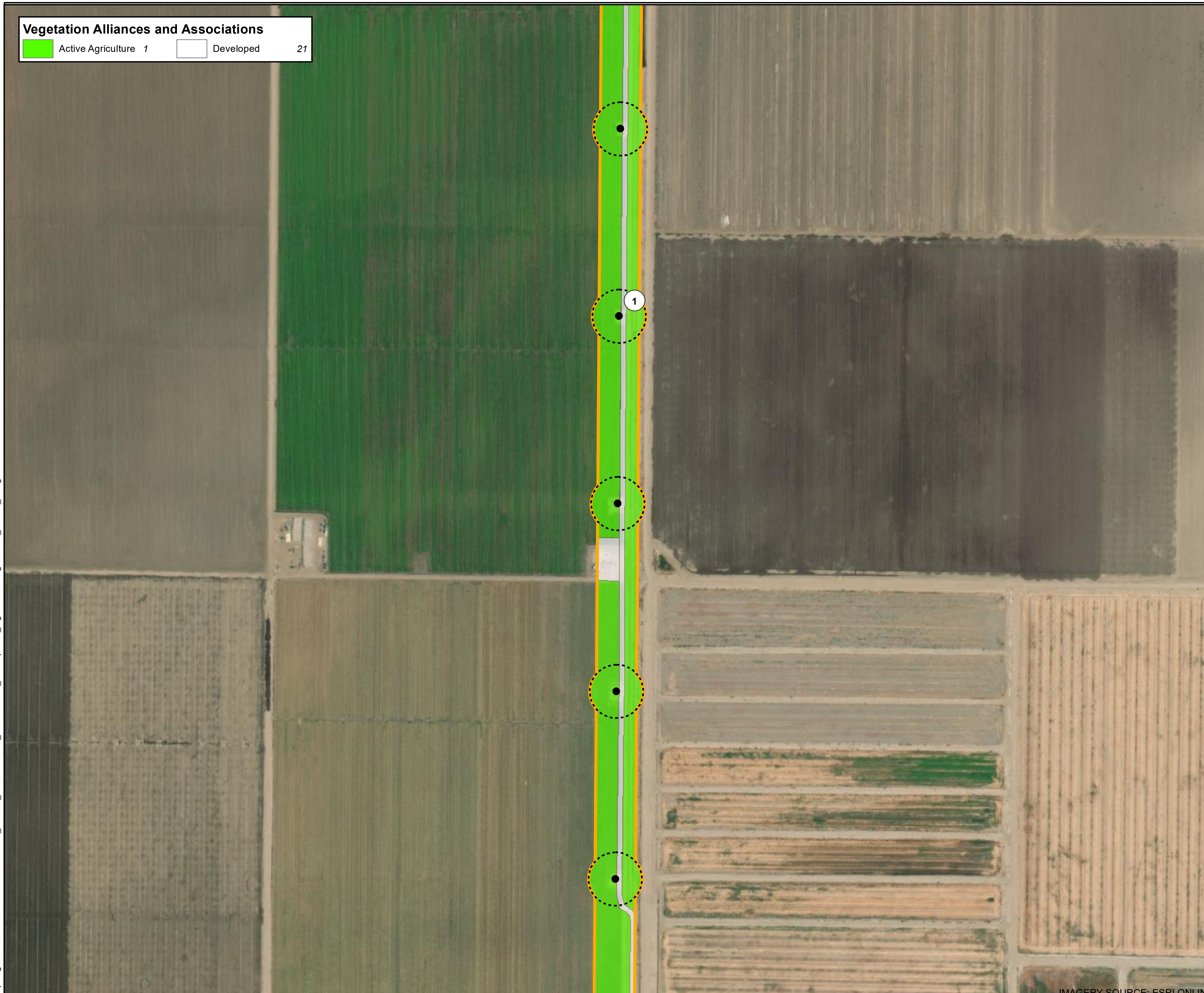

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\coparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

N

LEGEND

STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet

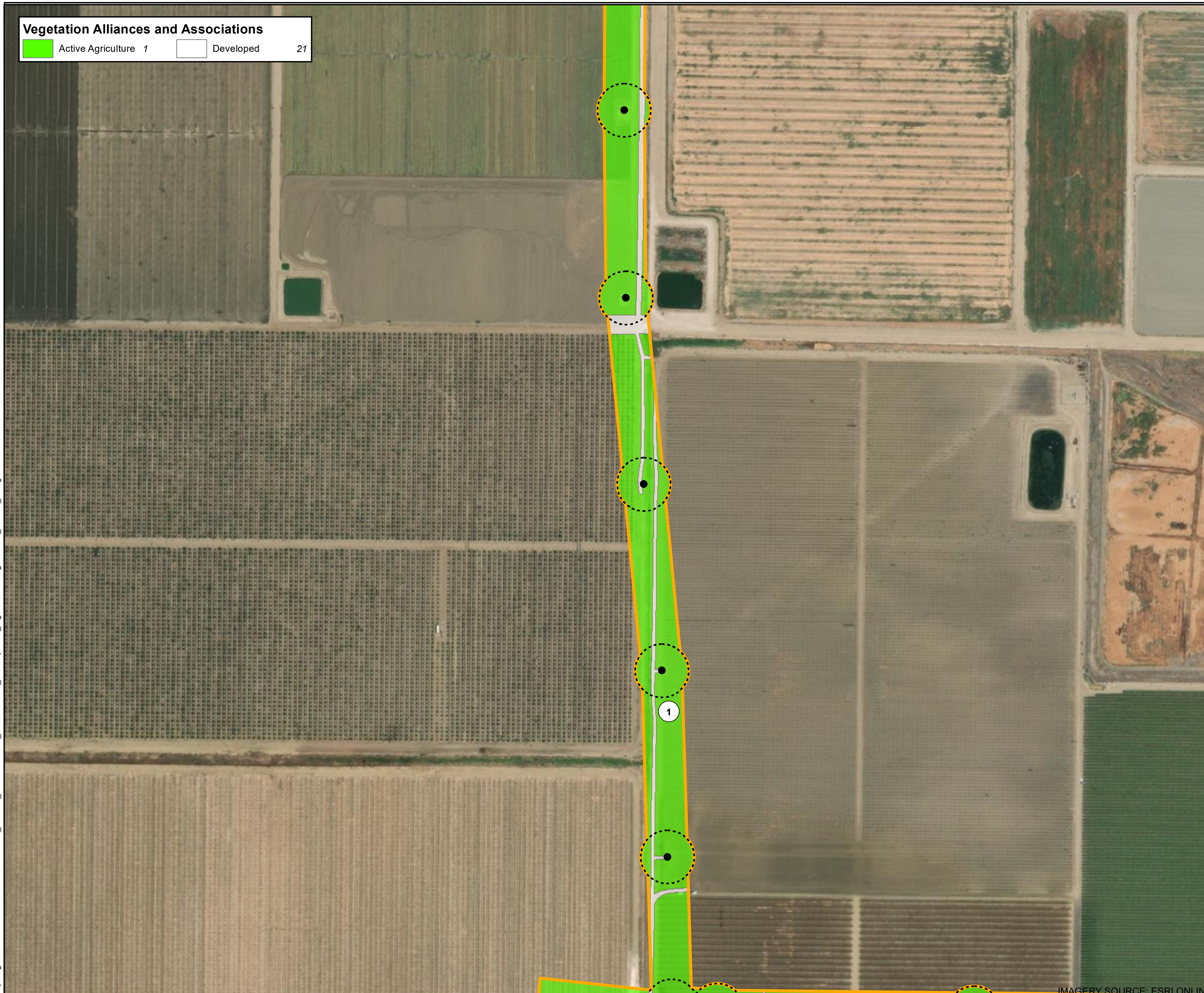

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

**FIGURESET**
**5.4-1**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

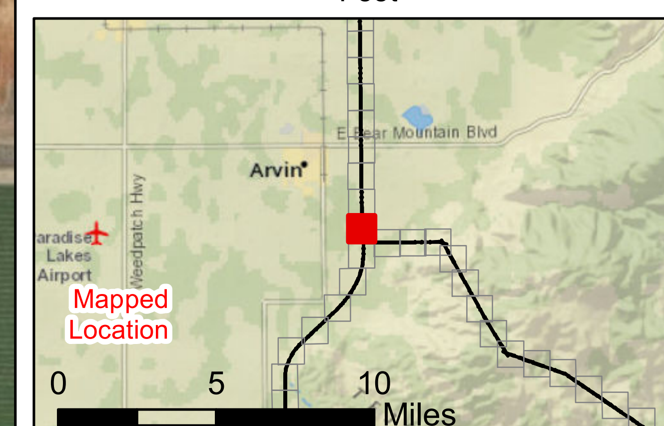
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



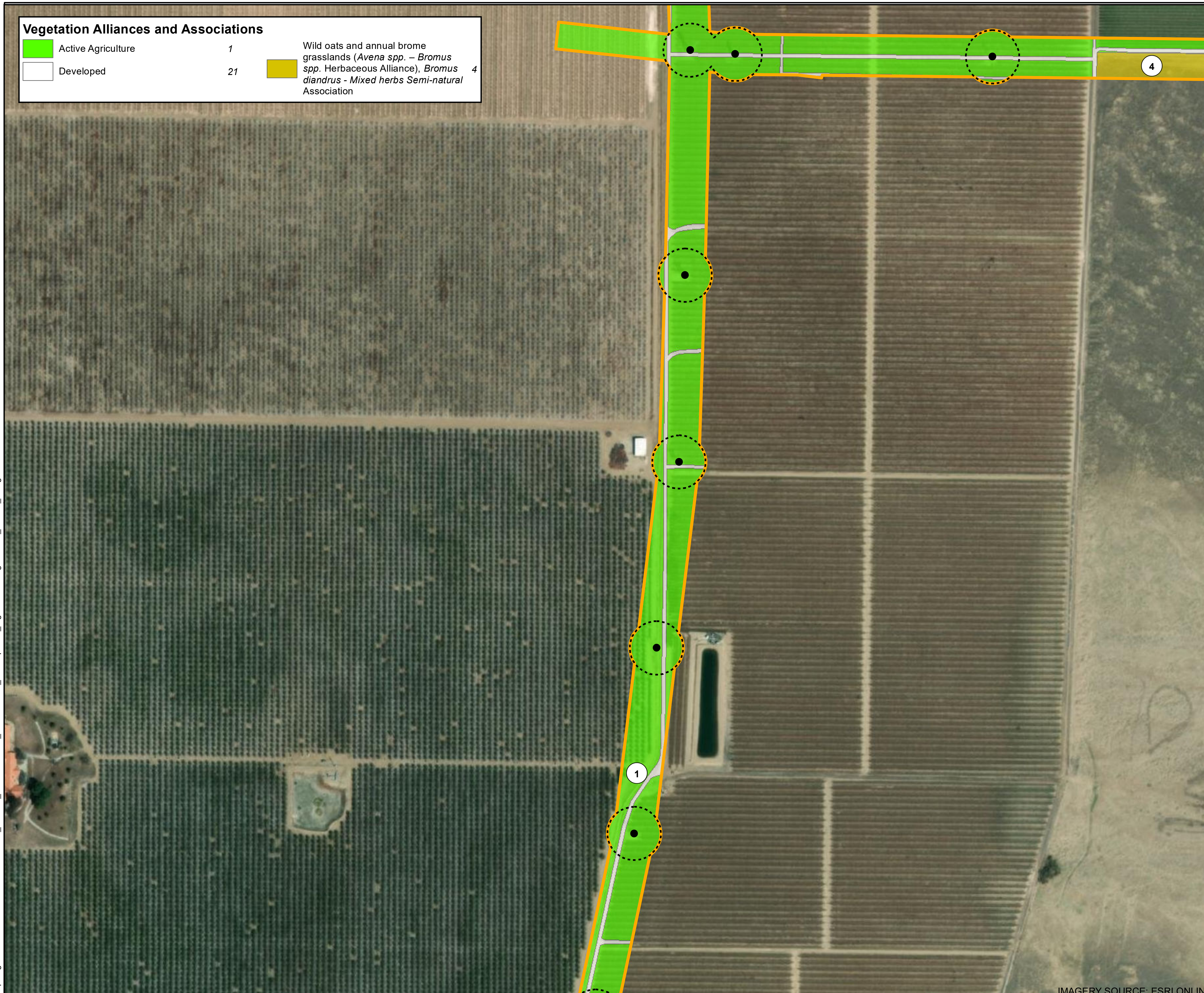

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company

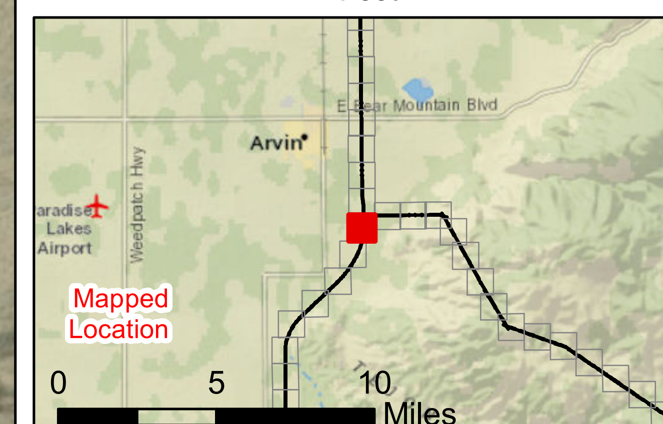
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



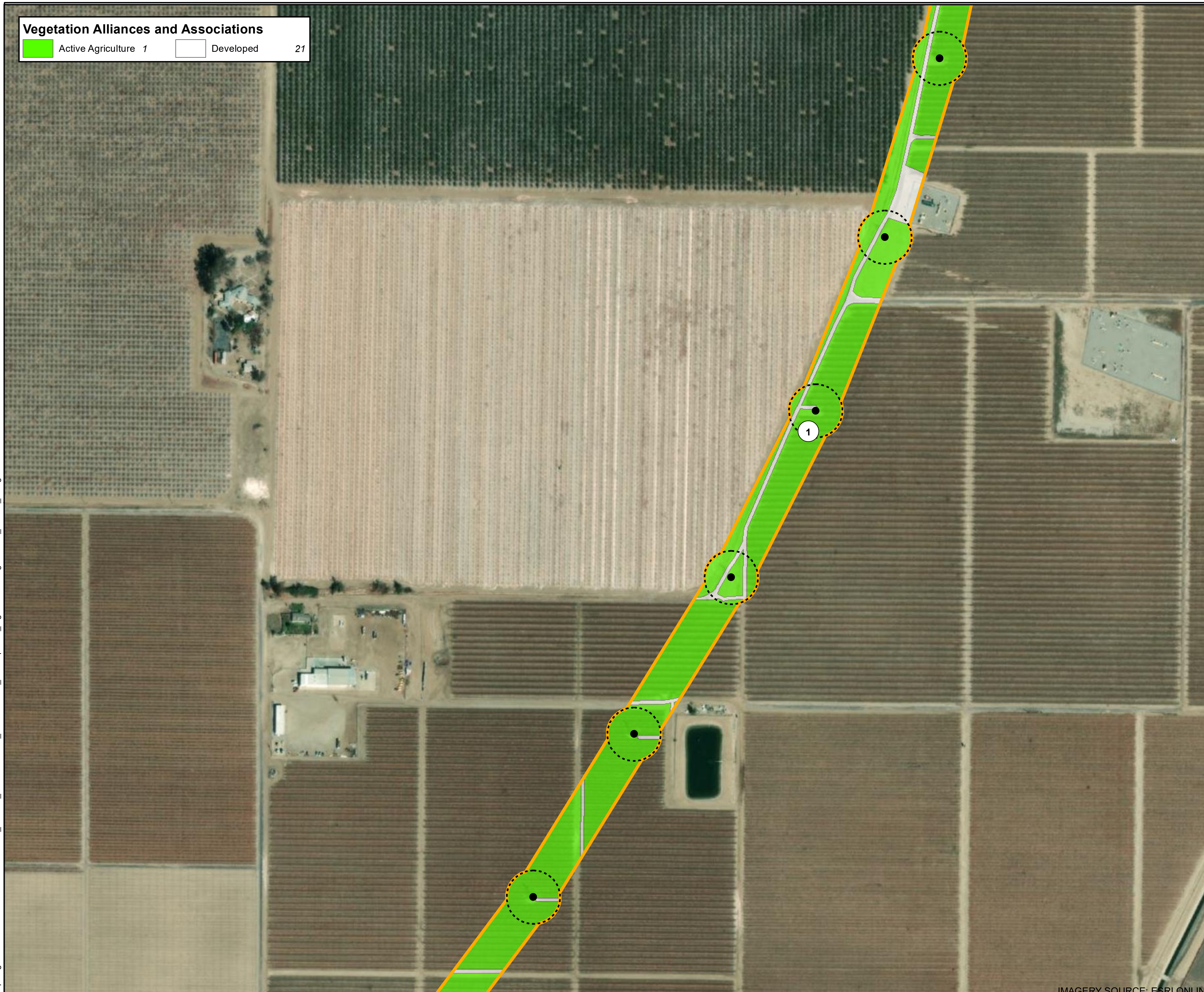

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

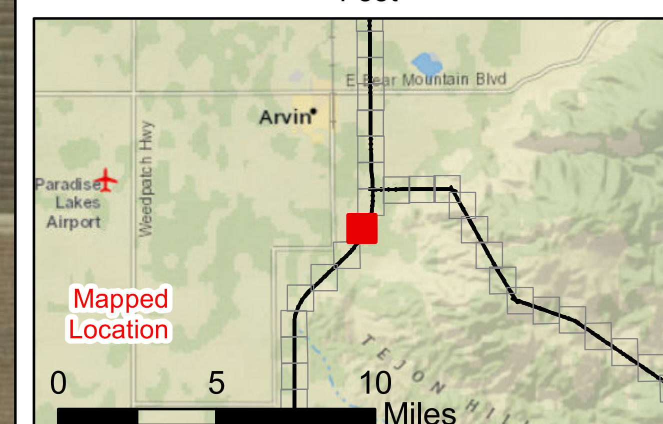
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



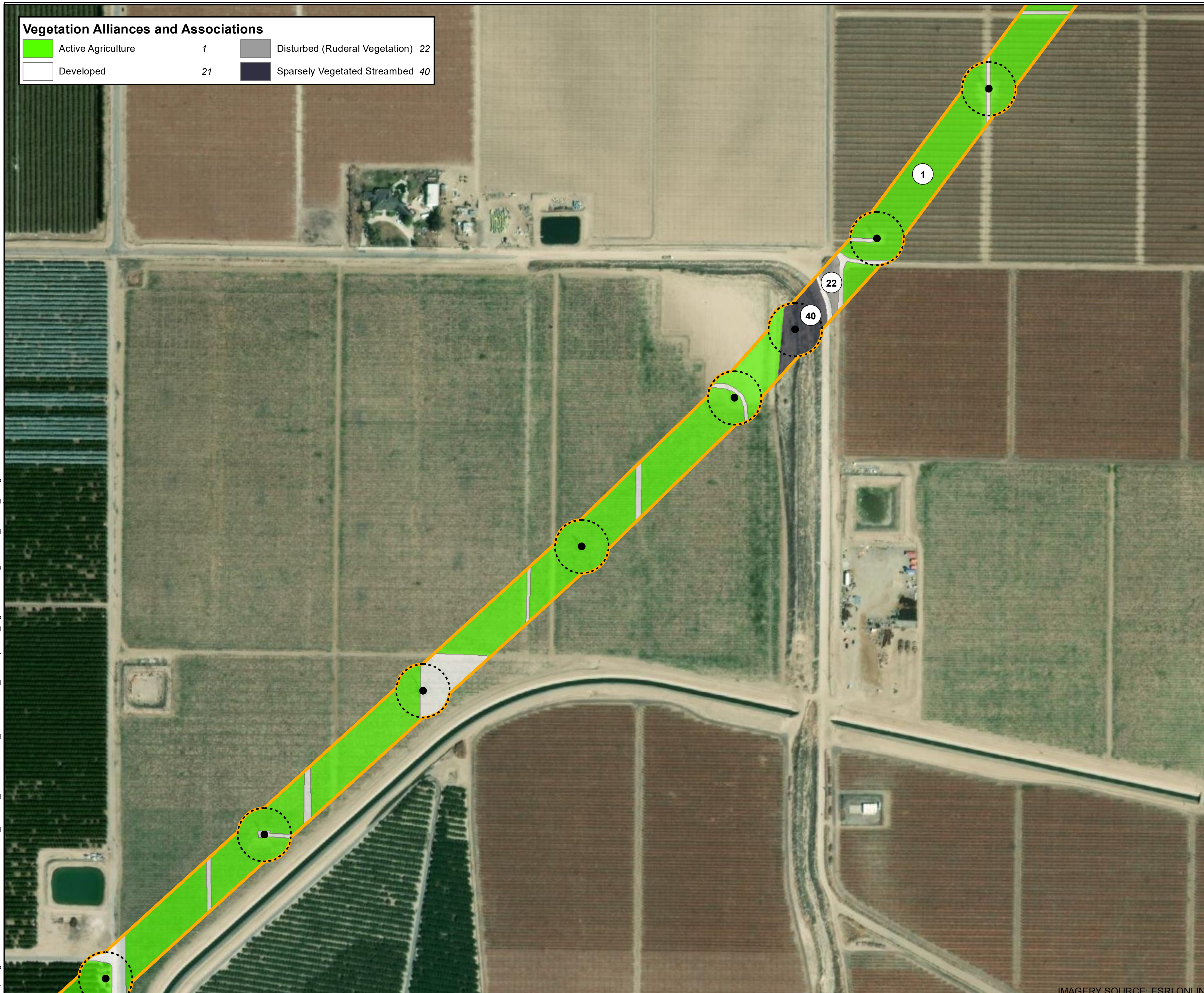

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

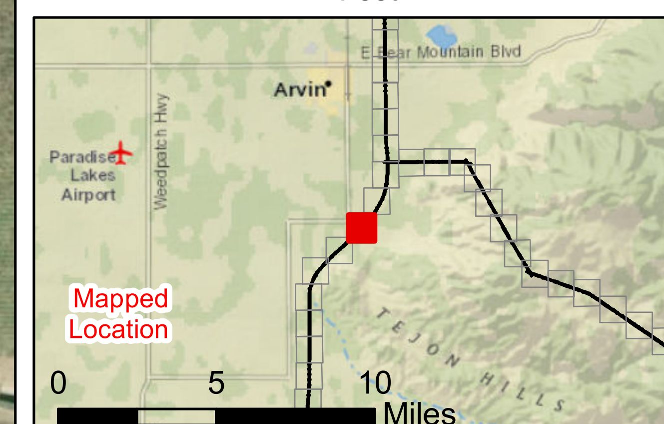
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



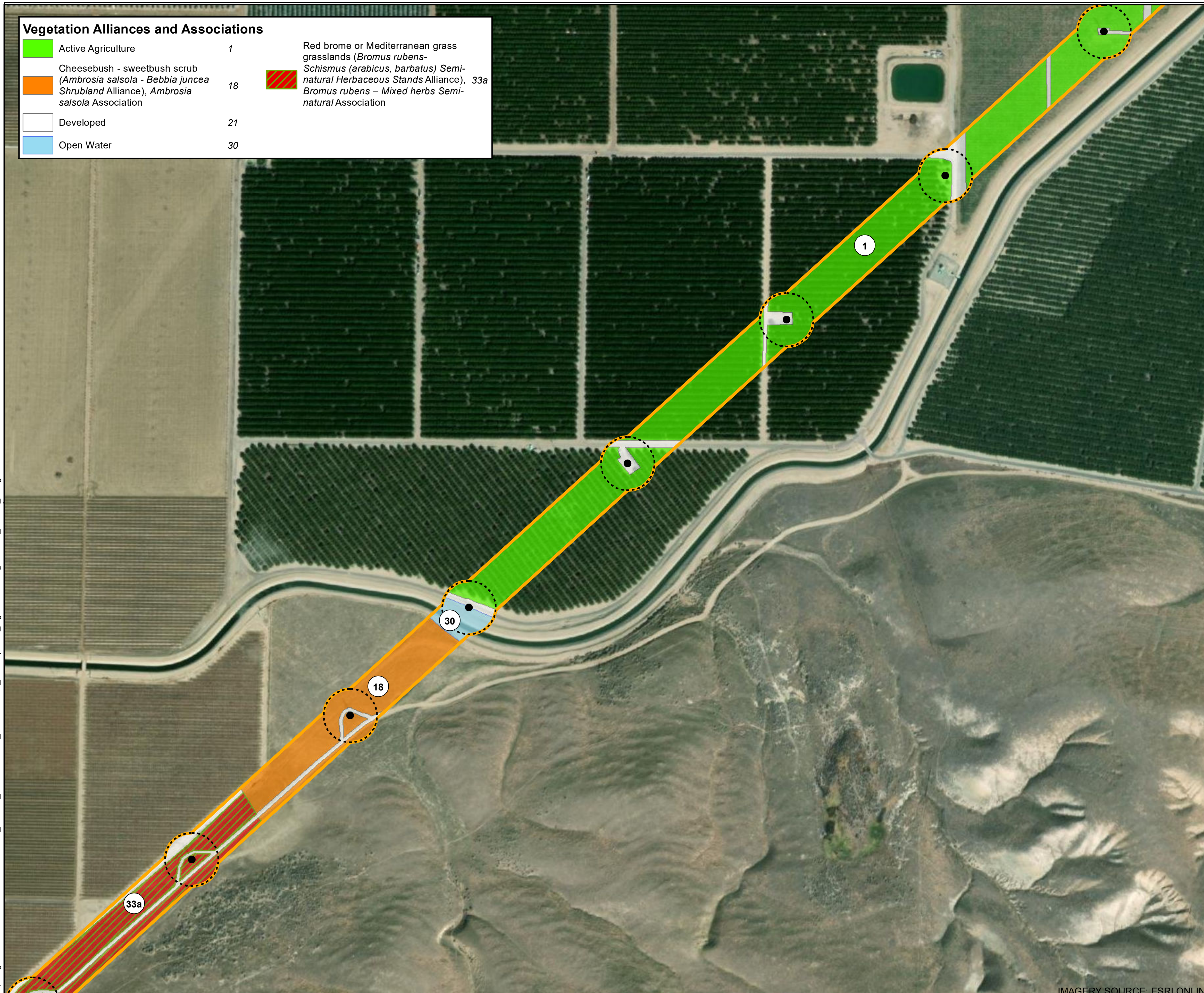

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

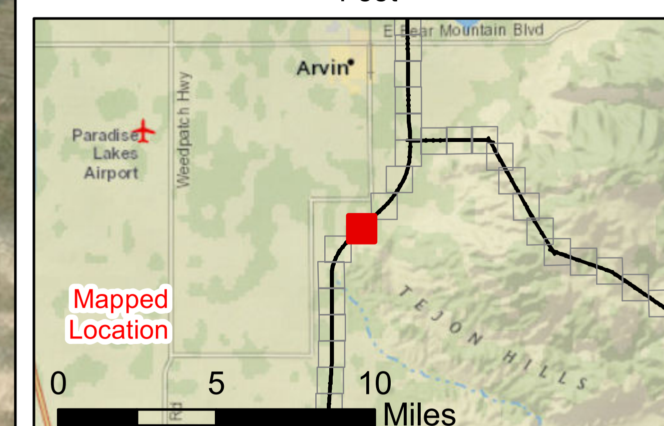
N

LEGEND

STRUCTURE LOCATION
100 FOOT RADIUS TOWER BUFFER
SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

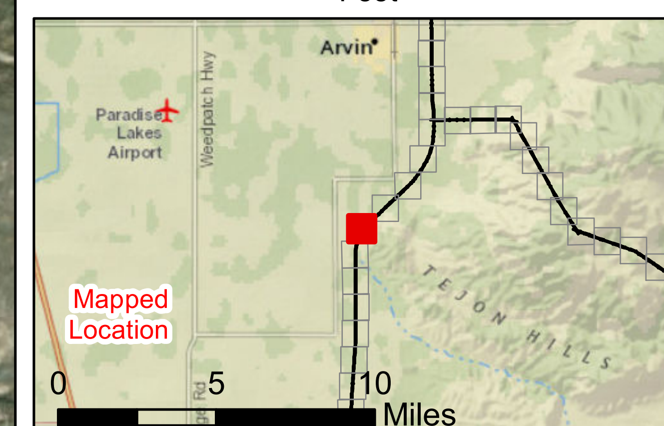
N

LEGEND

STRUCTURE LOCATION
100 FOOT RADIUS TOWER BUFFER
SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022

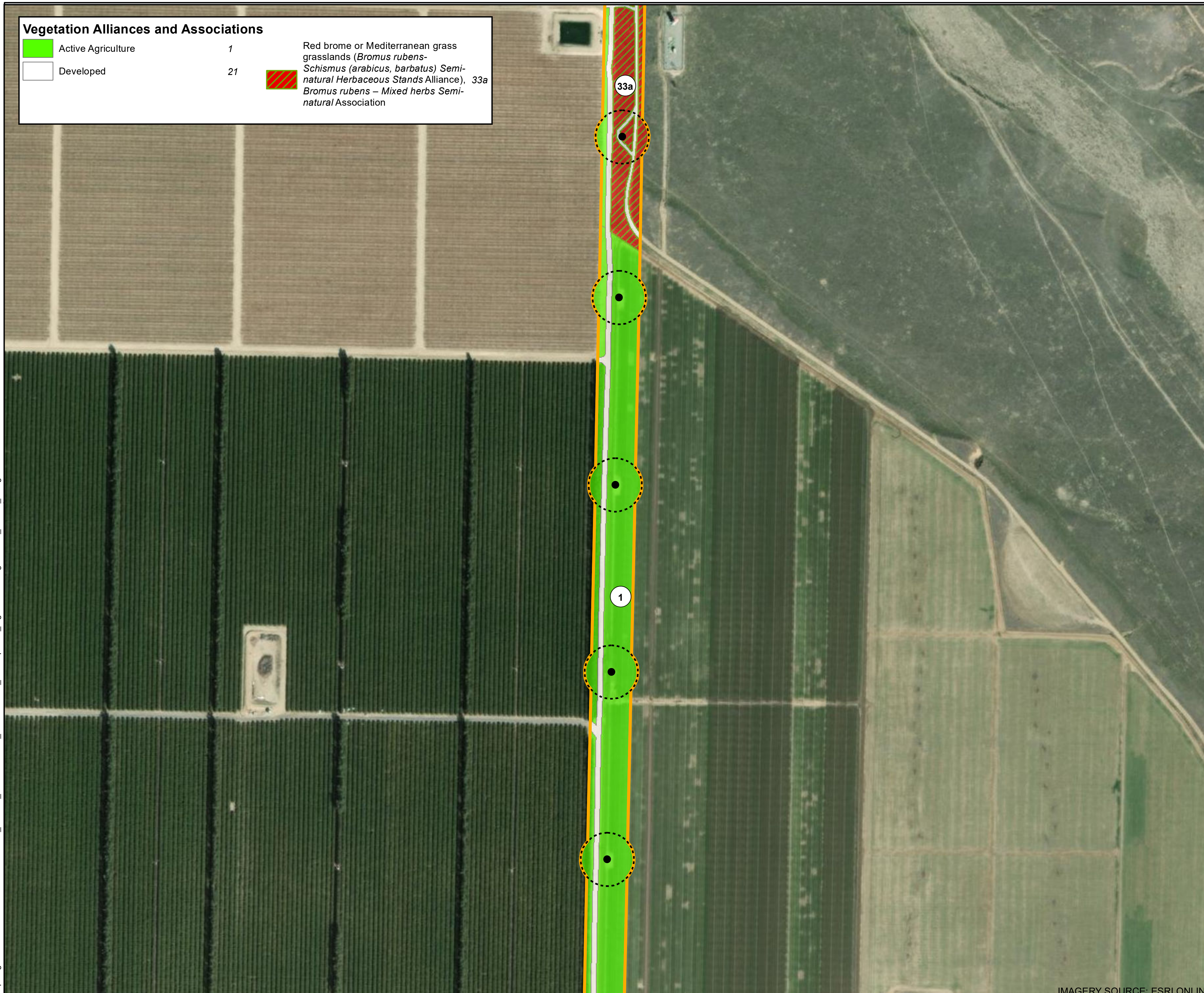

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

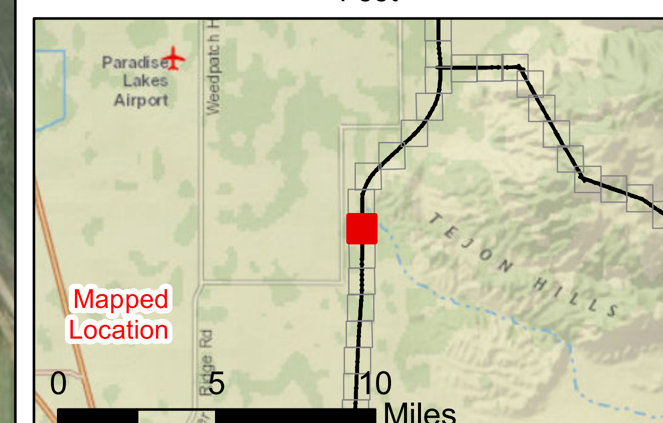
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

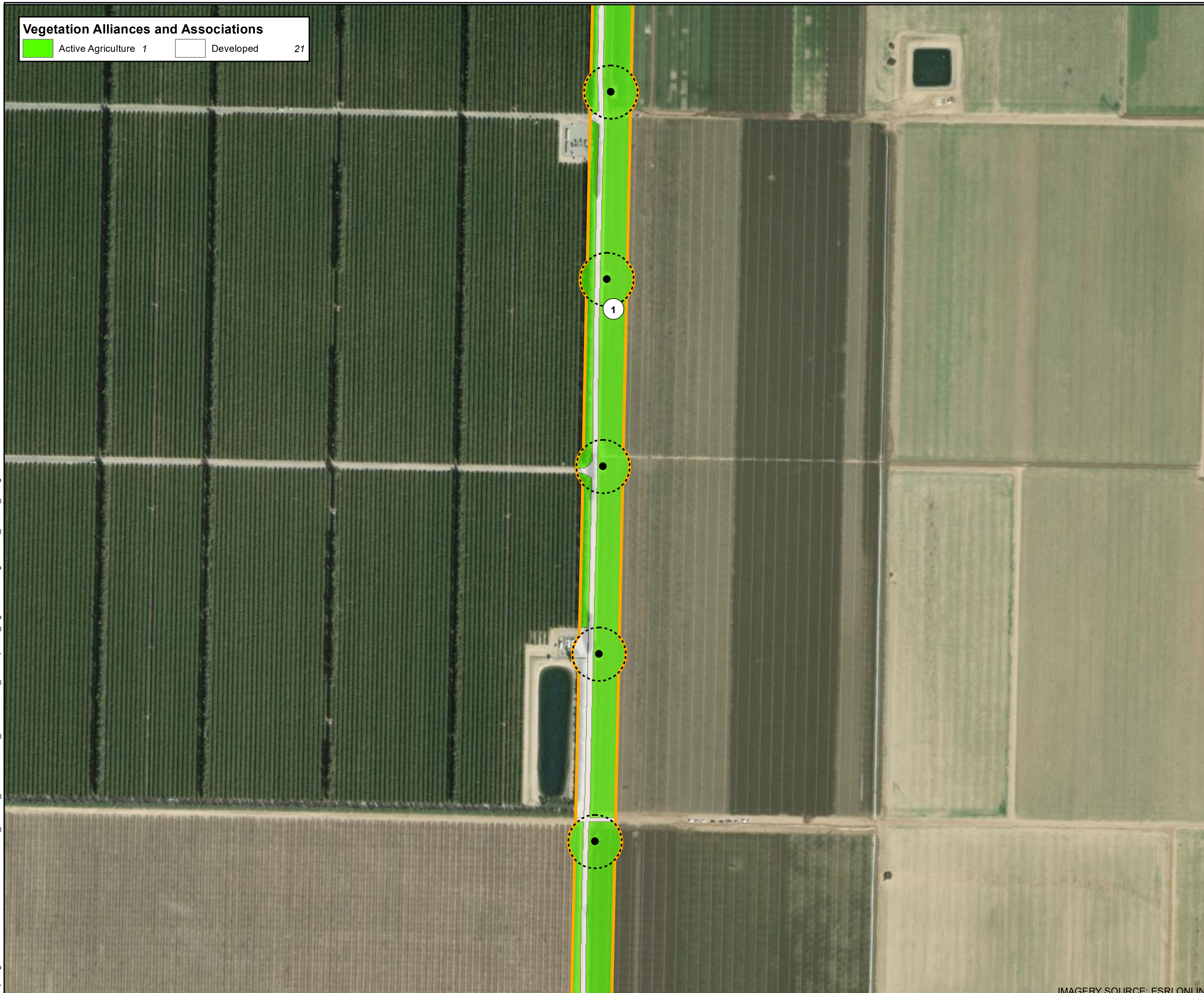
**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

**FIGURESET**

**5.4-1**

\\coparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

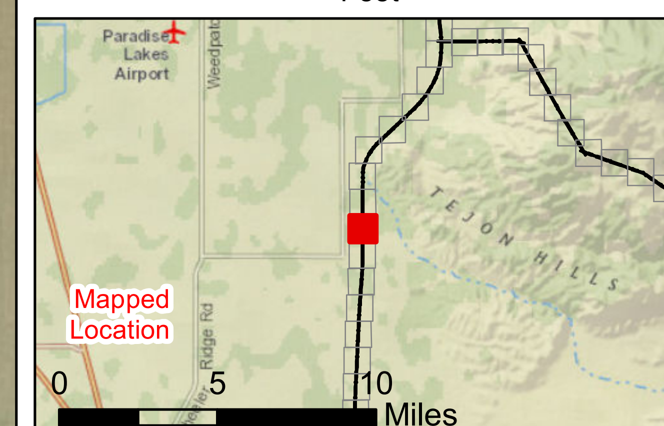
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



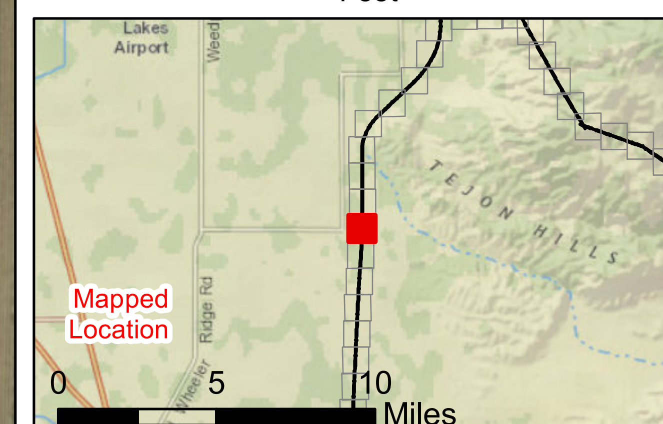

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T-_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet

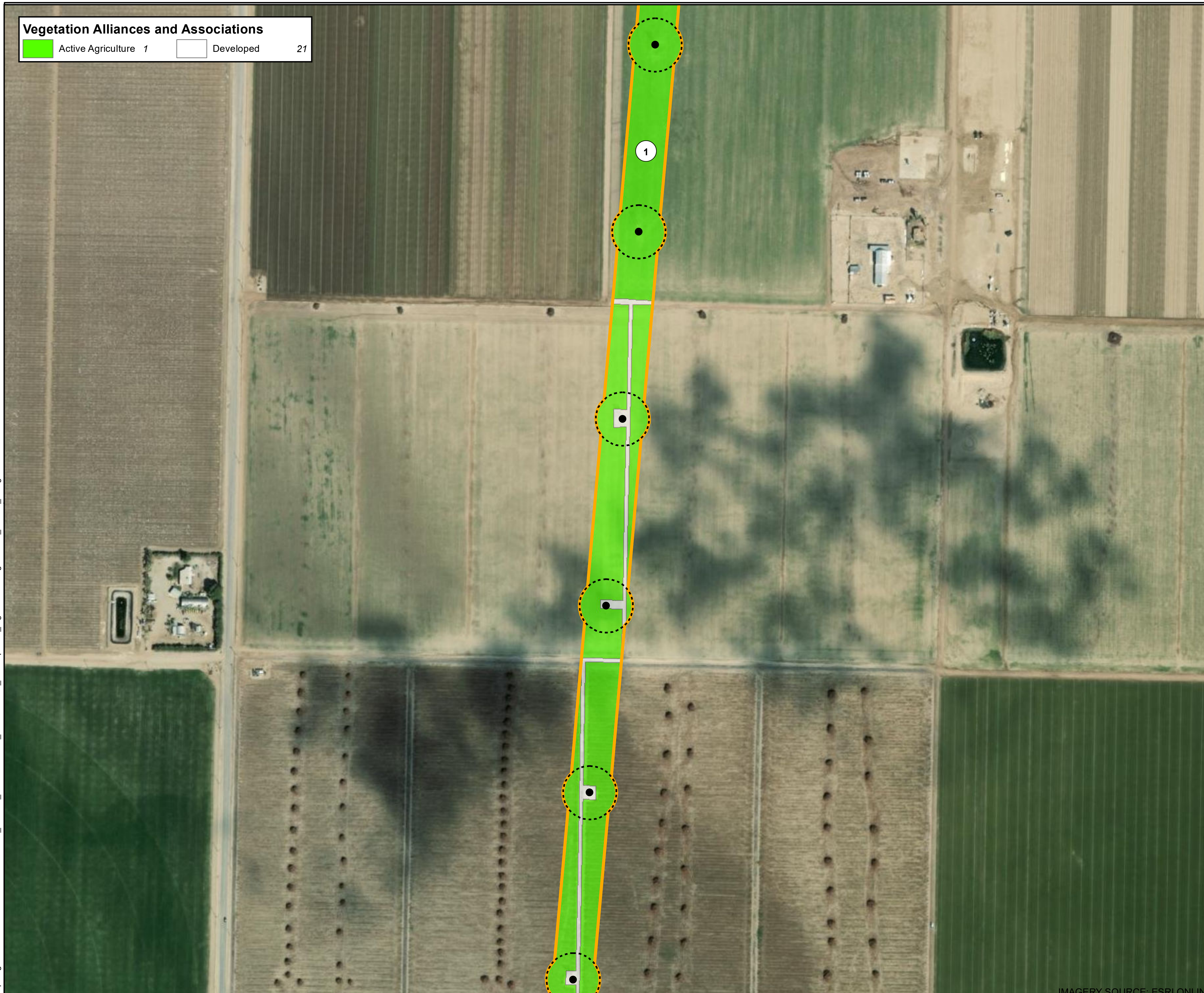
TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

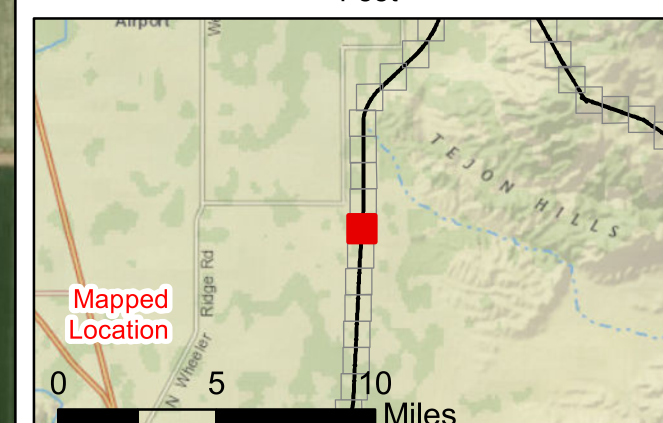
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\coparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

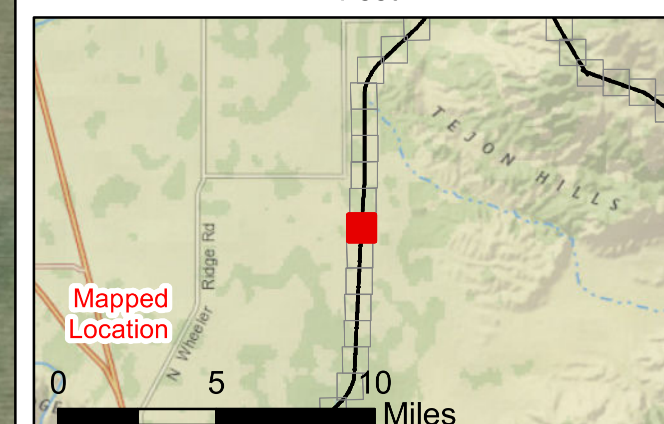
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



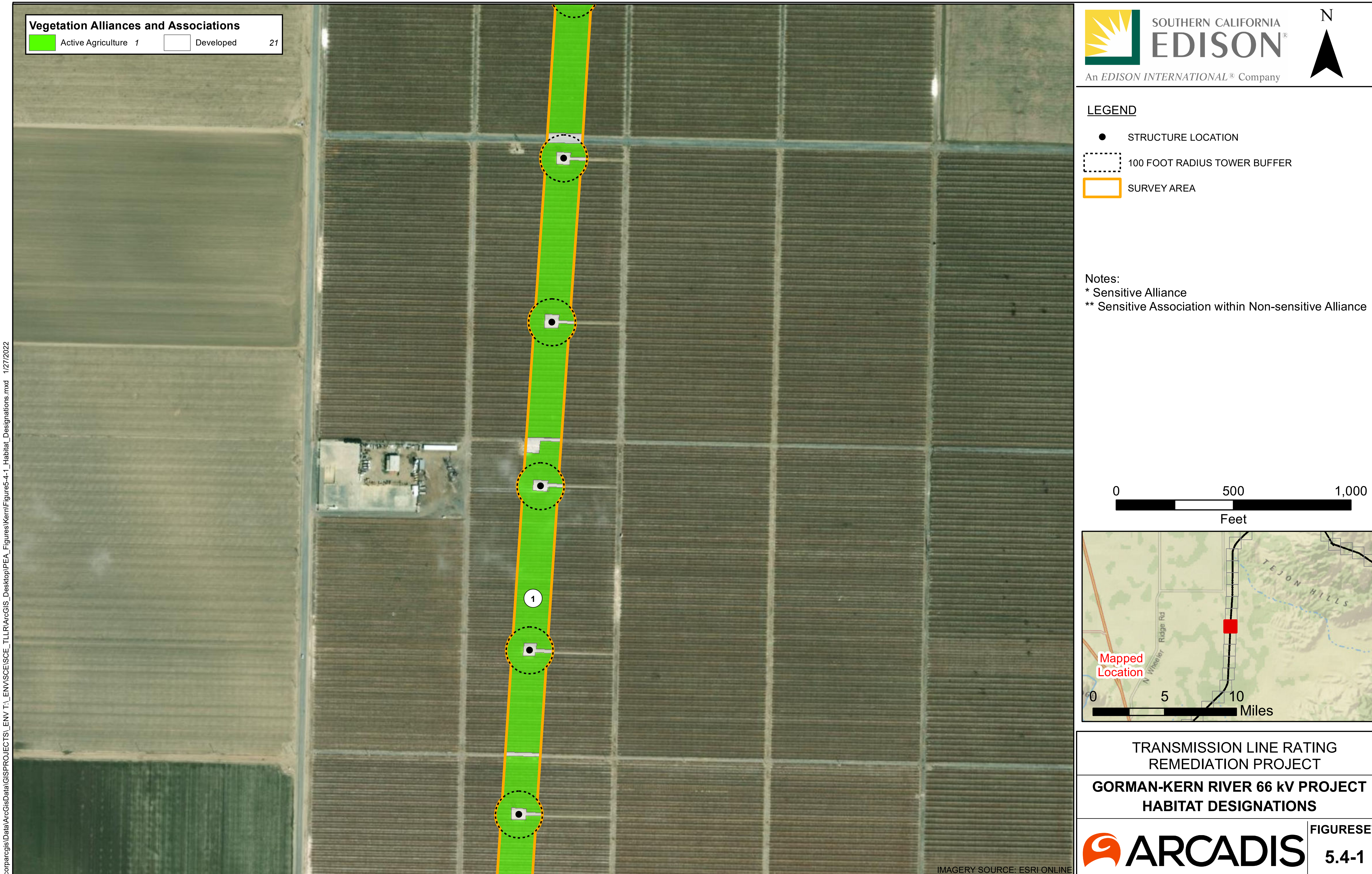

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022


Vegetation Alliances and Associations
Active Agriculture 1
Developed 21
1
IMAGERY SOURCE: ESRI ONLINE
\\coparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022
SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company
N
LEGEND
STRUCTURE LOCATION
100 FOOT RADIUS TOWER BUFFER
SURVEY AREA
Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance
0
500
1,000
Feet
TEJON HILLS
Ridge Rd
N Wheeler
Mapped Location
0
5
10
Miles
TRANSMISSION LINE RATING REMEDIATION PROJECT
GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS
ARCADIS
FIGURESET
5.4-1


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

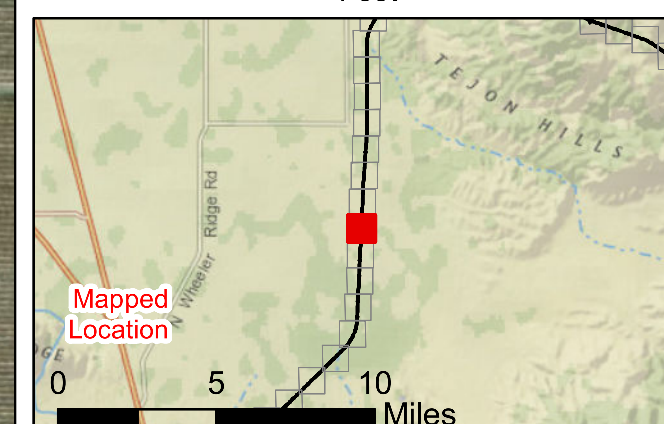
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



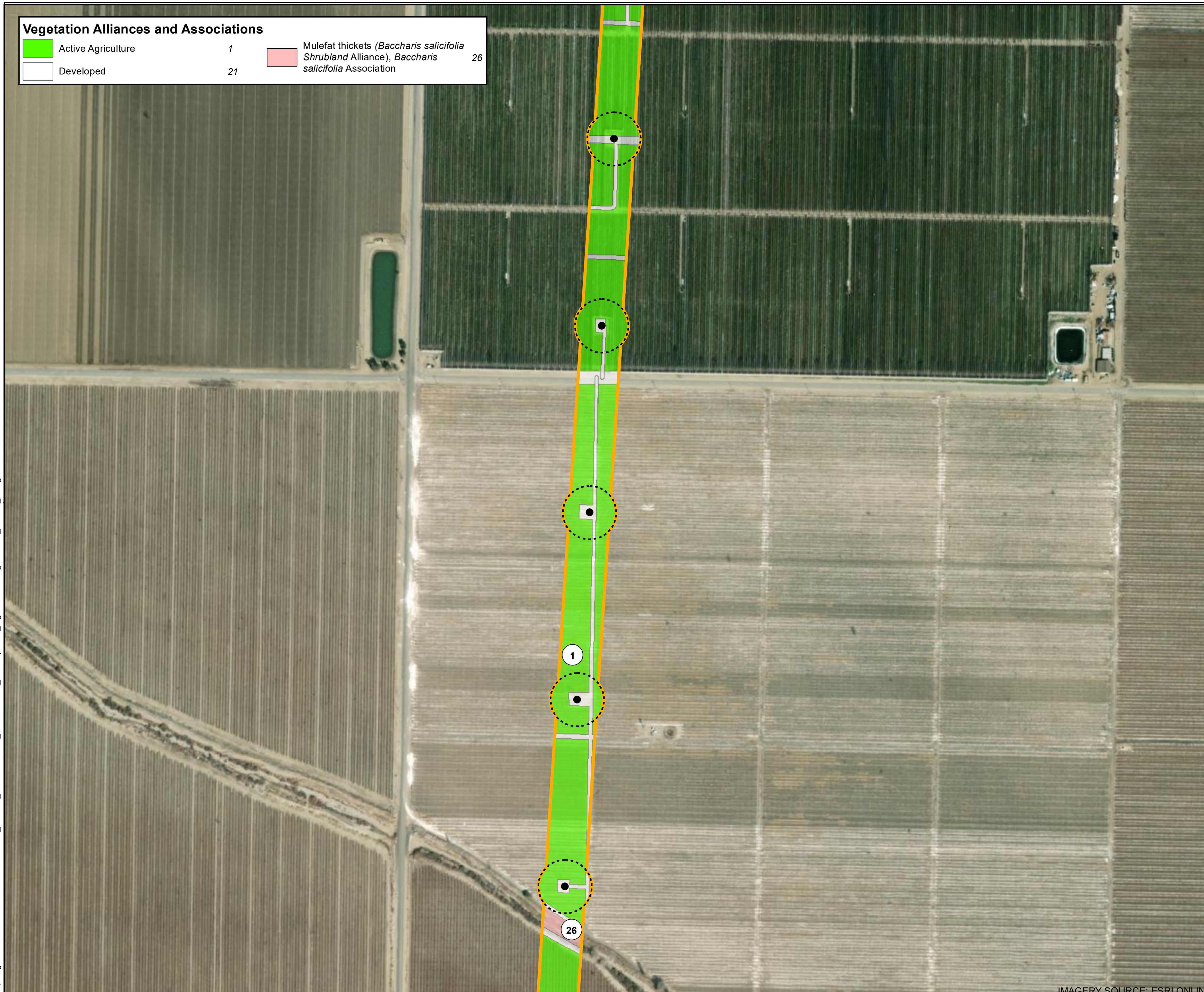

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

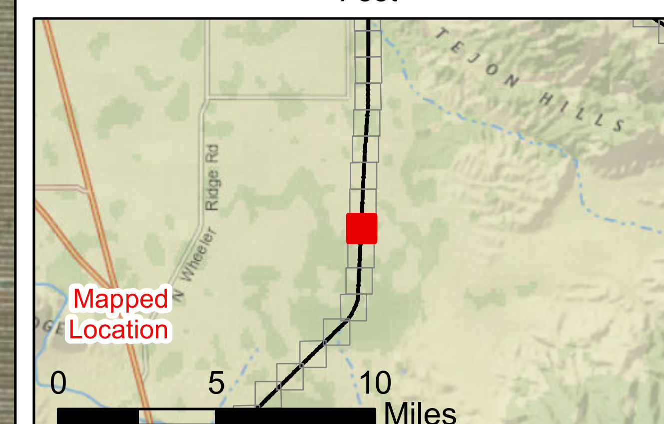
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

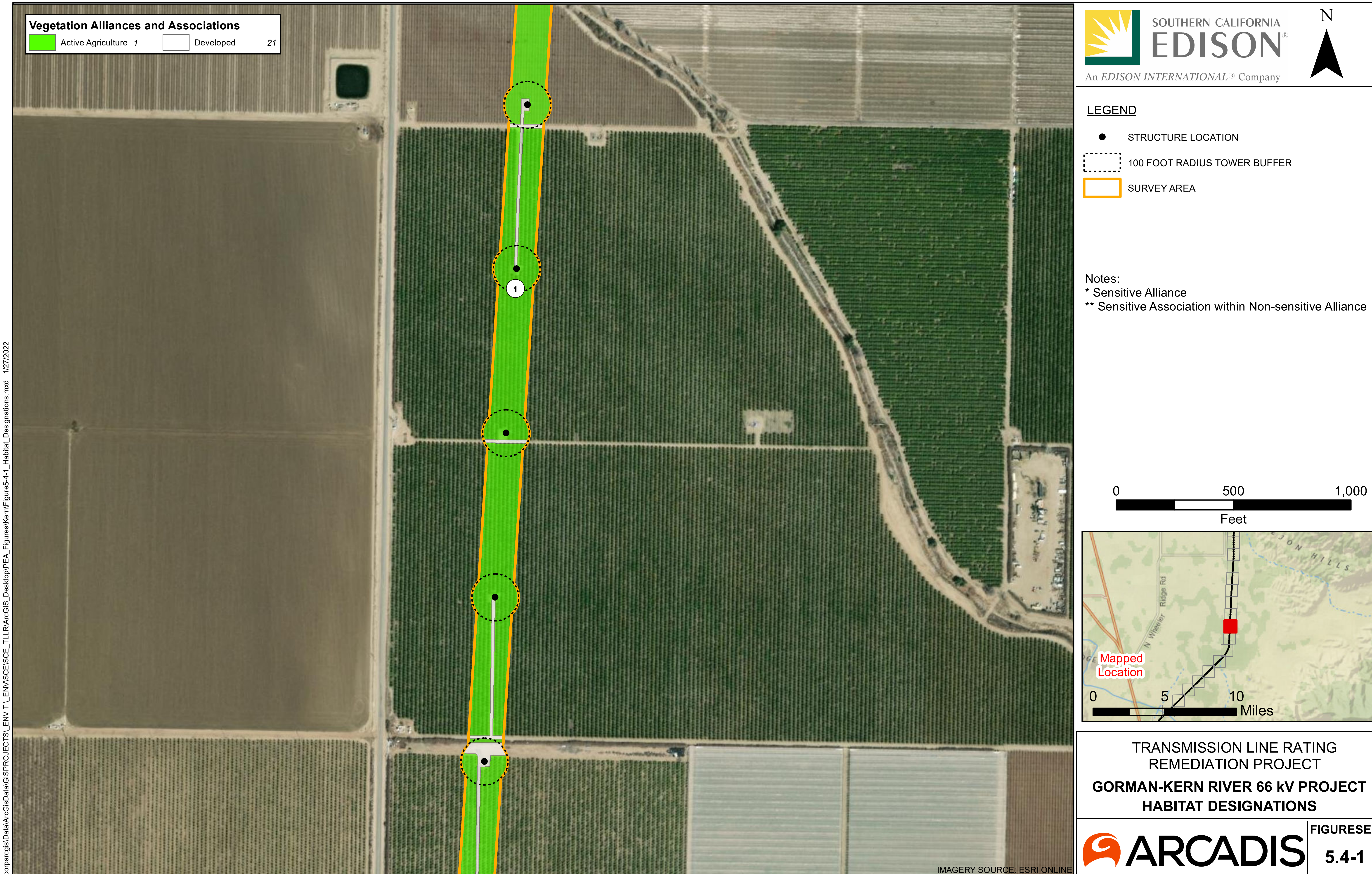
**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

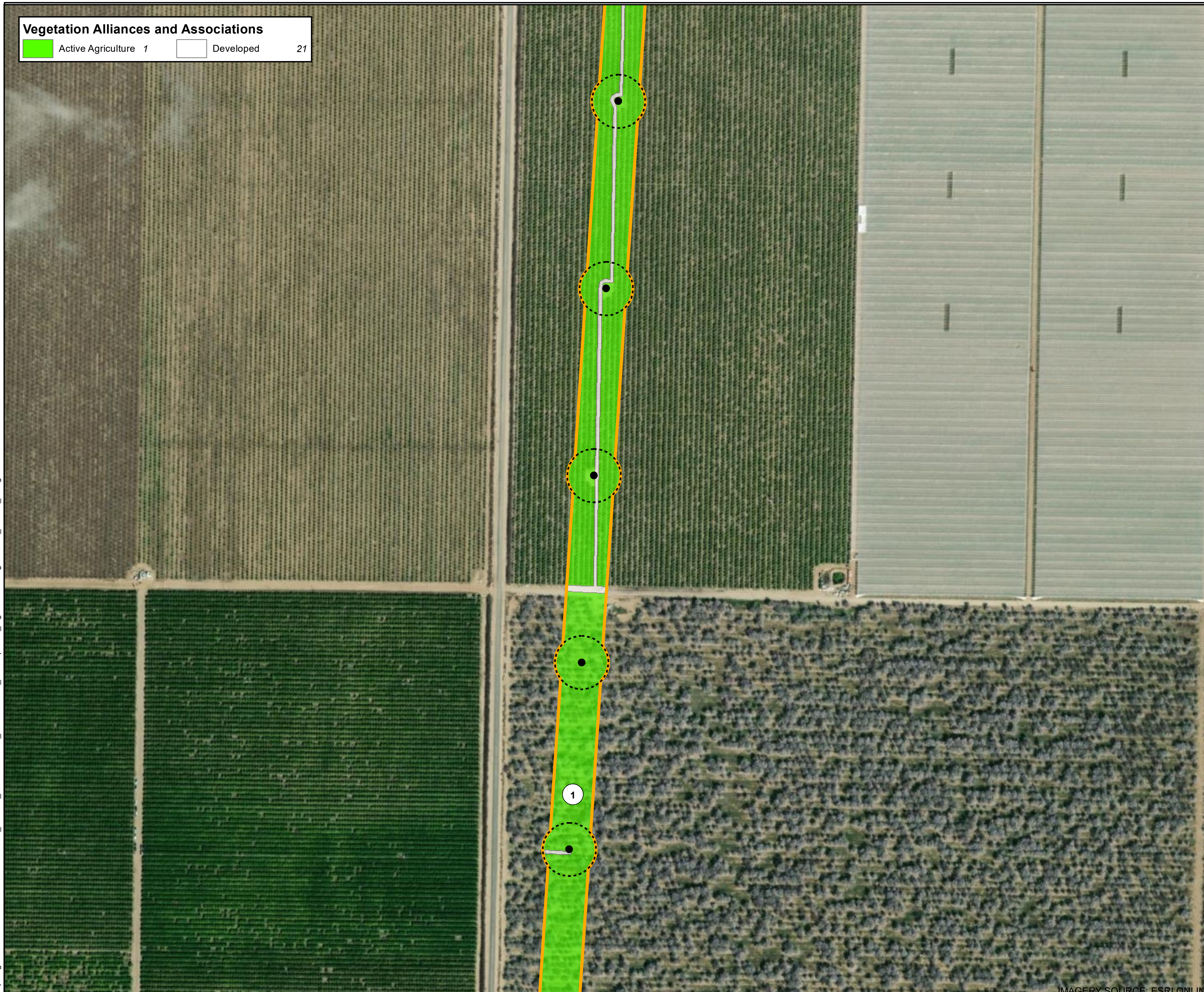
FIGURESET

5.4-1

\\coparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022



Vegetation Alliances and Associations
Active Agriculture 1
Developed 21
1
IMAGERY SOURCE: ESRI ONLINE
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company
N
LEGEND
STRUCTURE LOCATION
100 FOOT RADIUS TOWER BUFFER
SURVEY AREA
Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance
0
500
1,000
Feet
Mapped Location
Ridge Rd
N Wheeler
0
5
10
Miles
TRANSMISSION LINE RATING REMEDIATION PROJECT
GORMAN-KERN RIVER 66 kV PROJECT
HABITAT DESIGNATIONS
ARCADIS
FIGURESET
5.4-1
\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

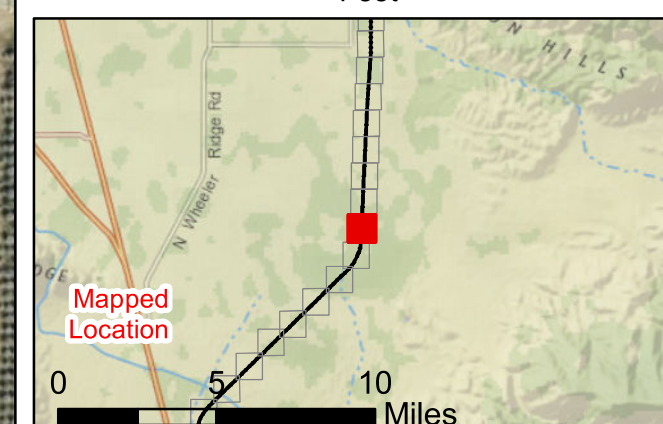
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

**FIGURESET**
**5.4-1**

\\coparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

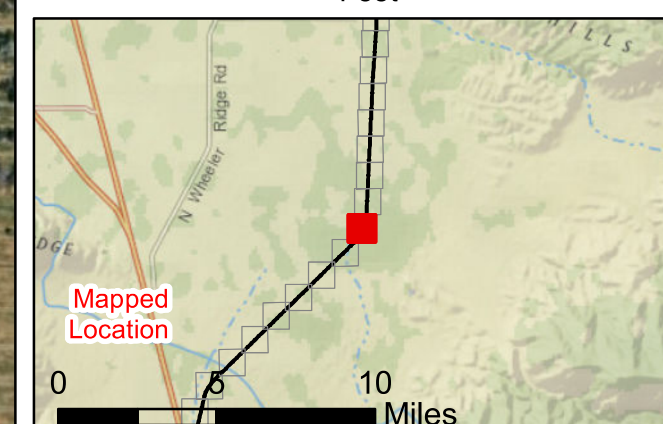
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



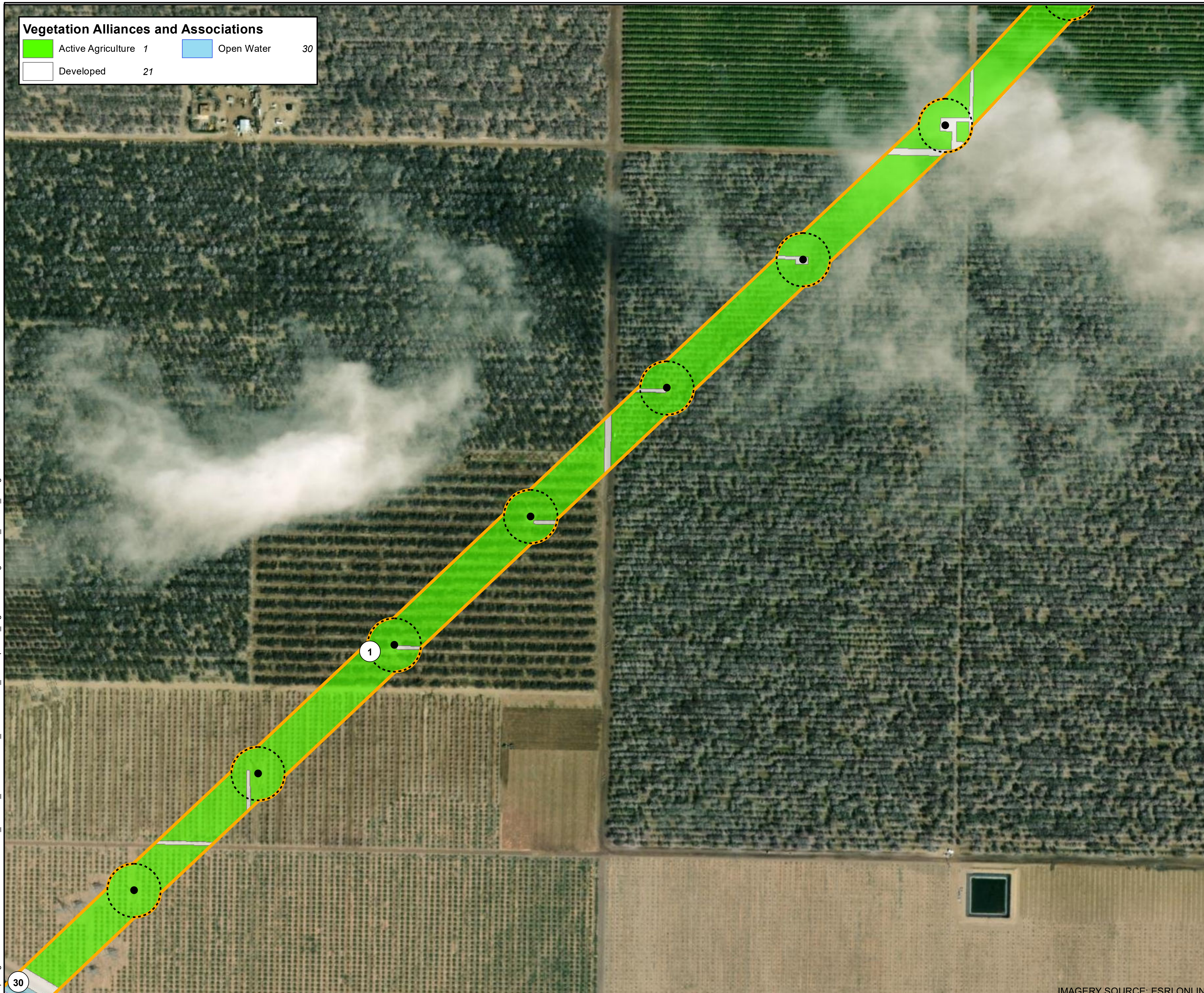

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1

\\coparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

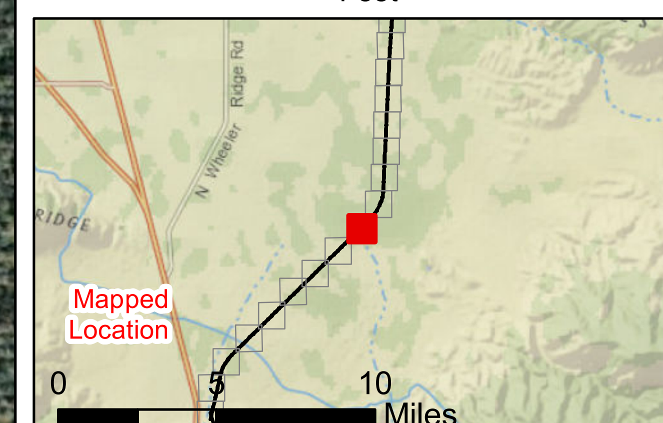
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



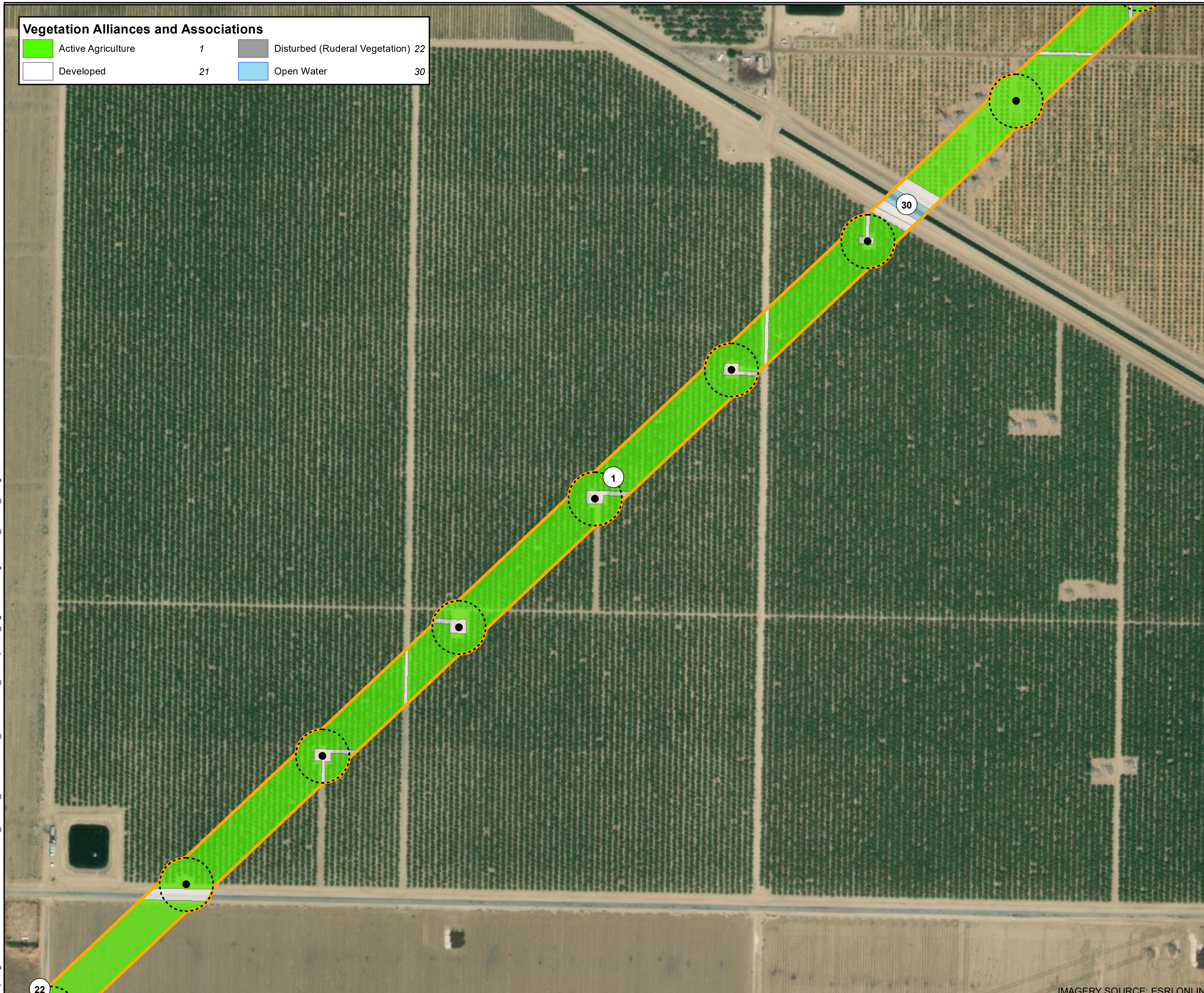

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\coparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

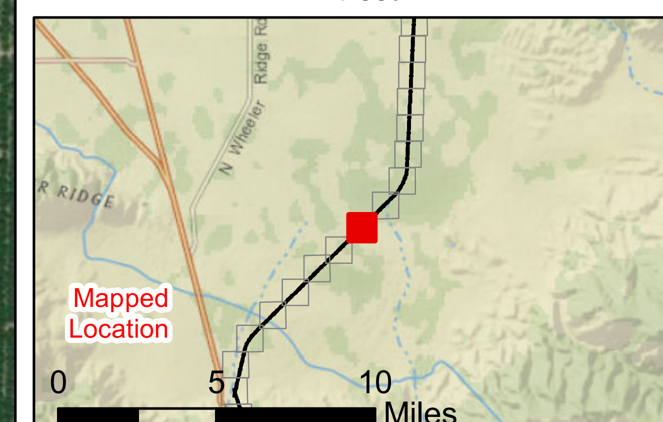
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



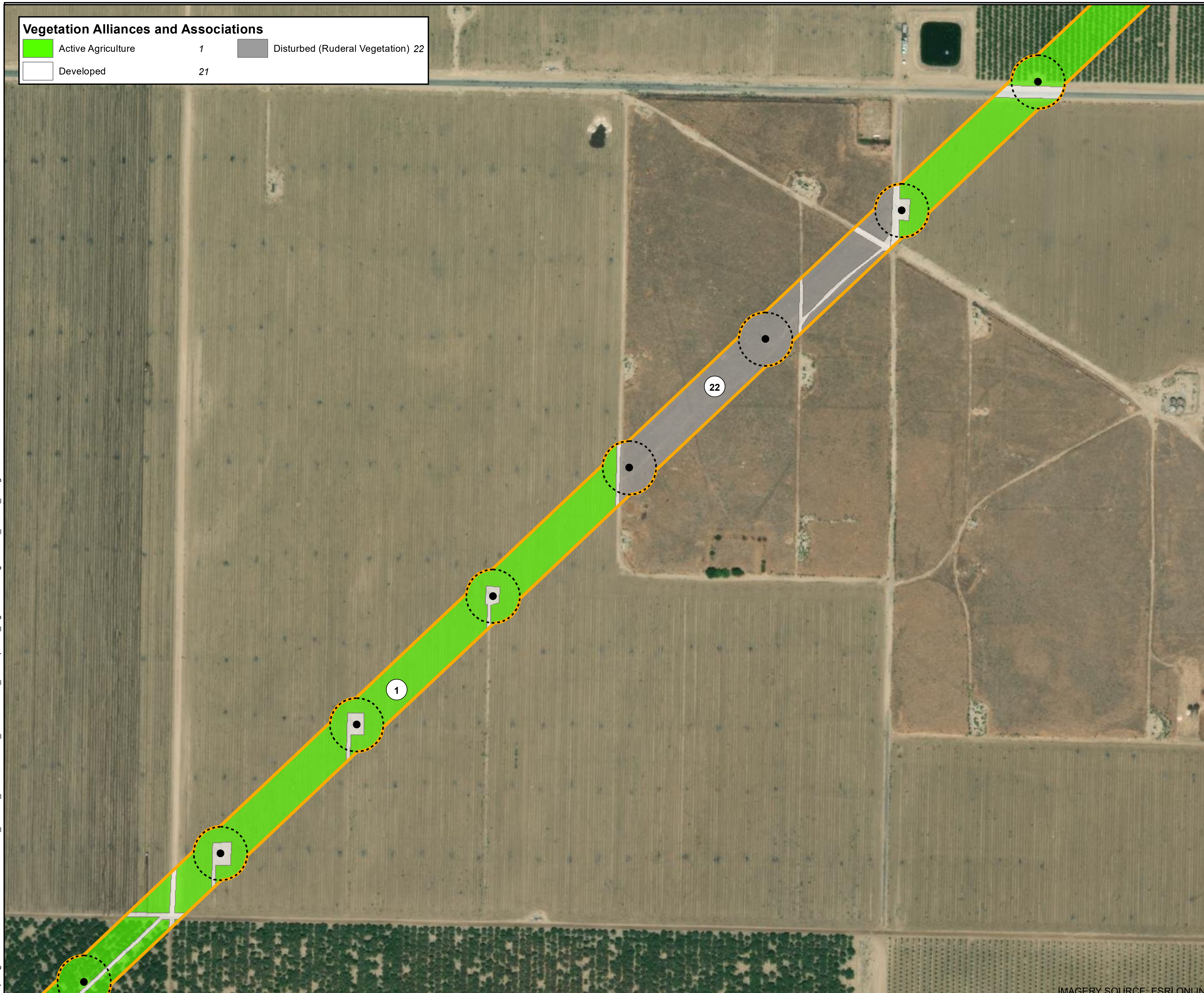

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1

\\coparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

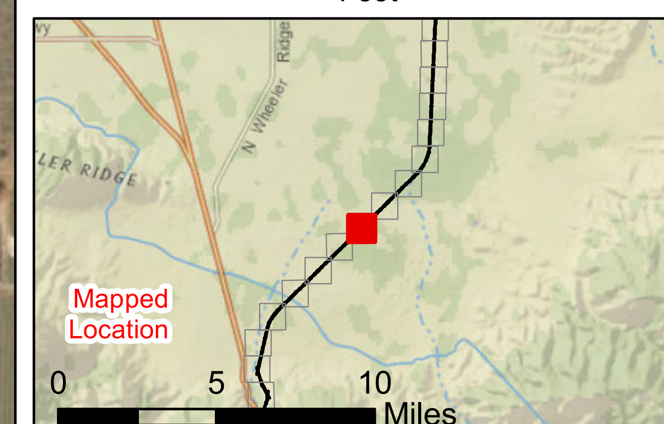
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



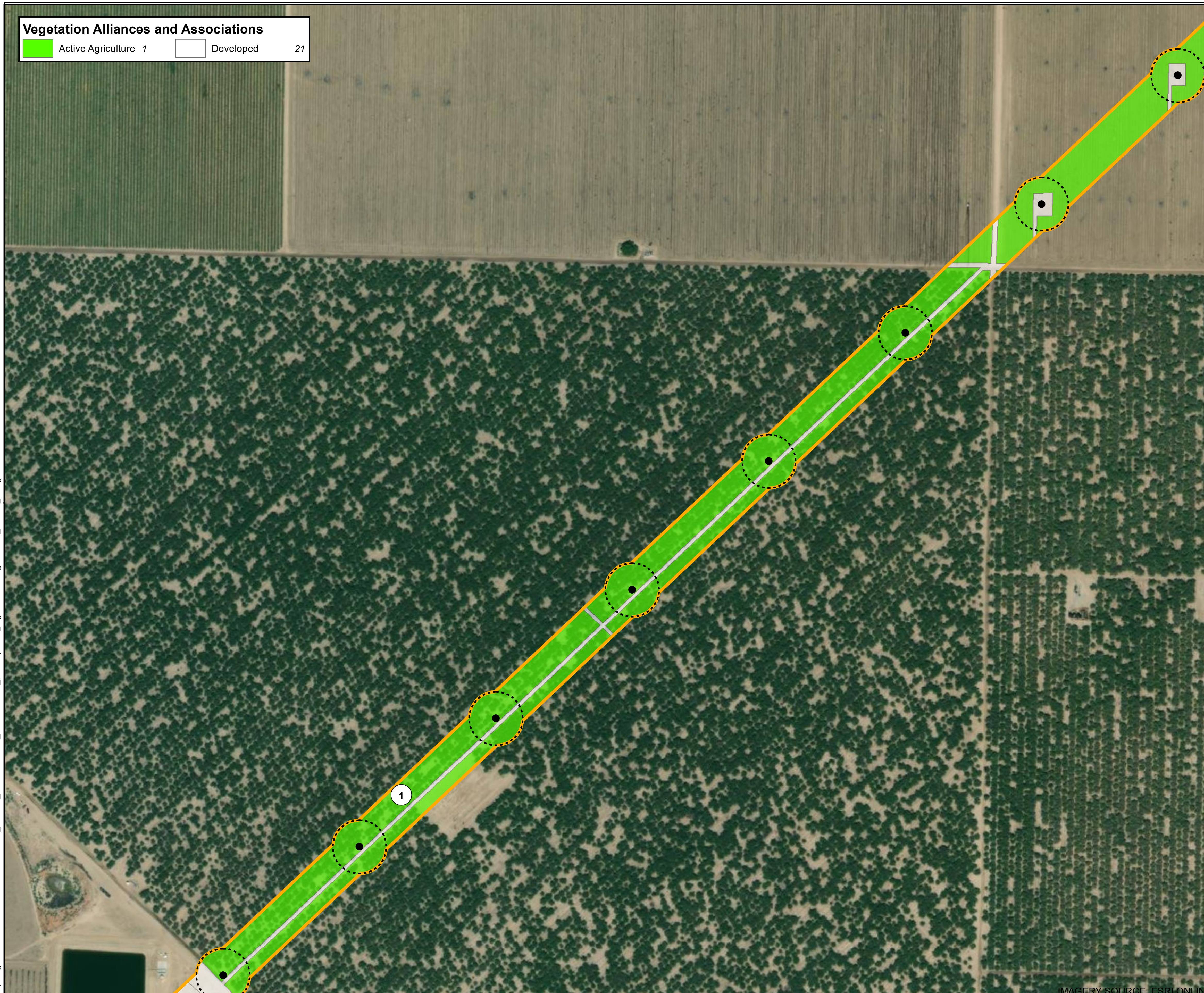

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1

\\copgarcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

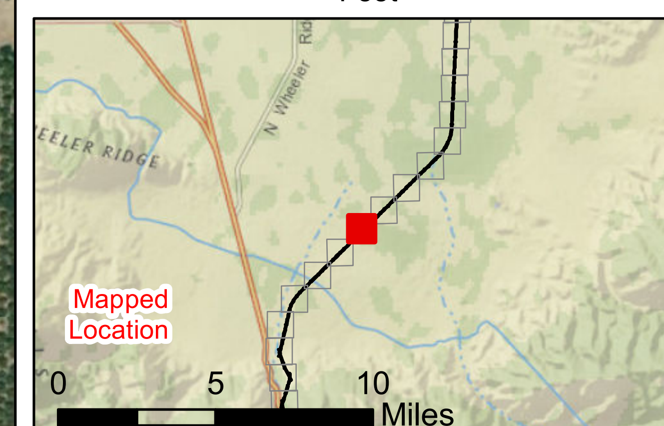
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

**FIGURESET**
**5.4-1**

\\coparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022


SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

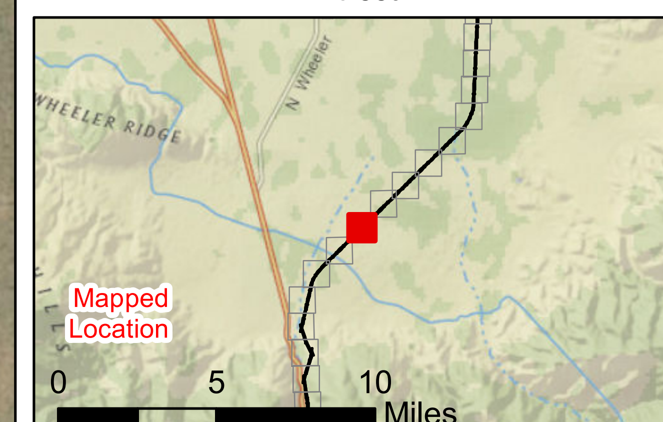
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



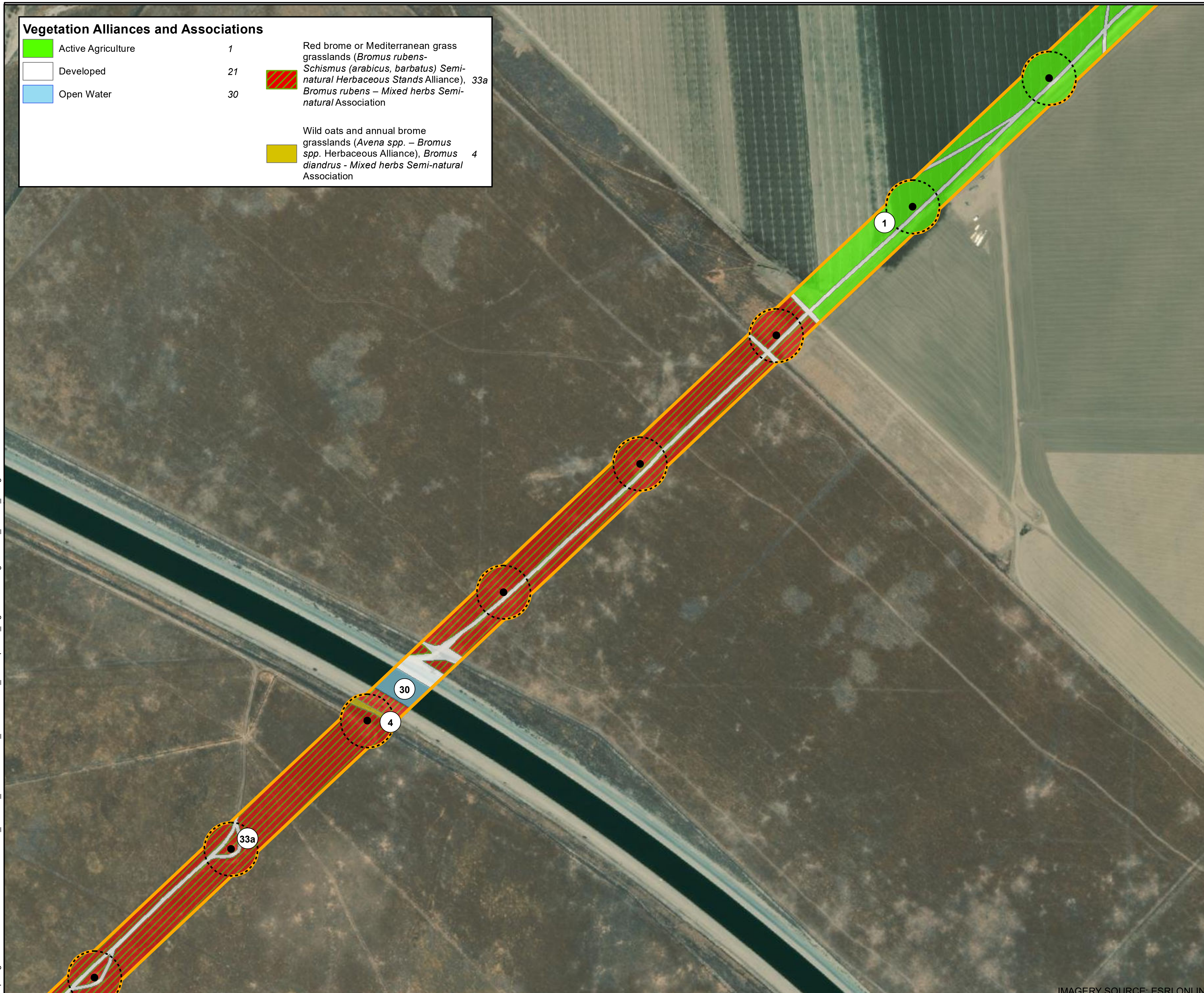

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

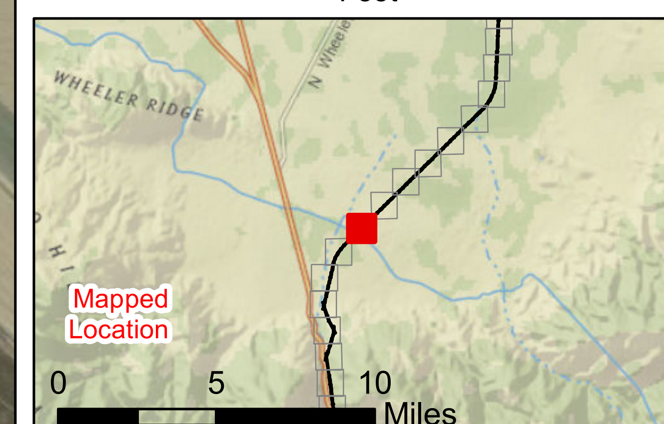
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
**5.4-1**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

N

LEGEND

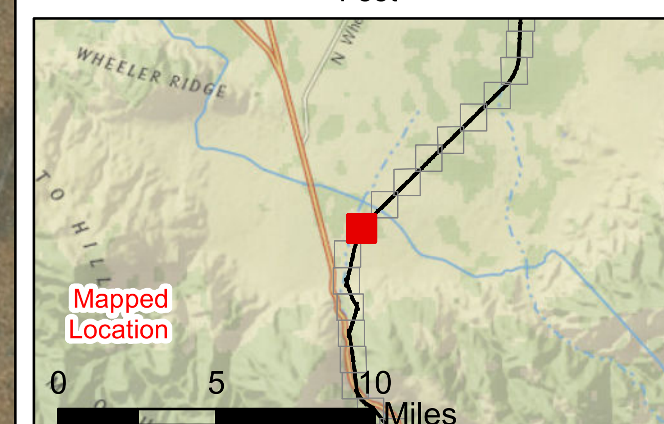
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

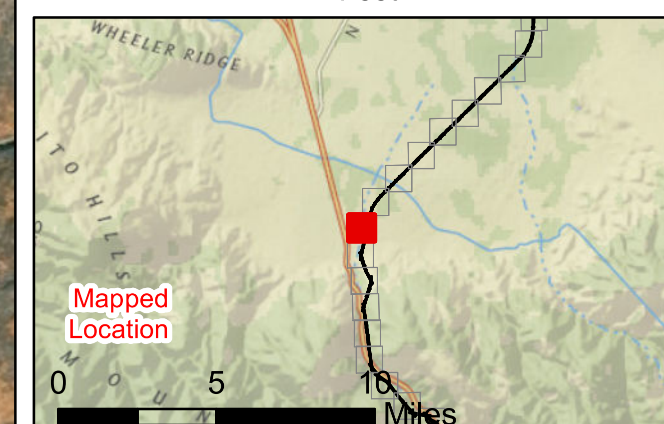
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



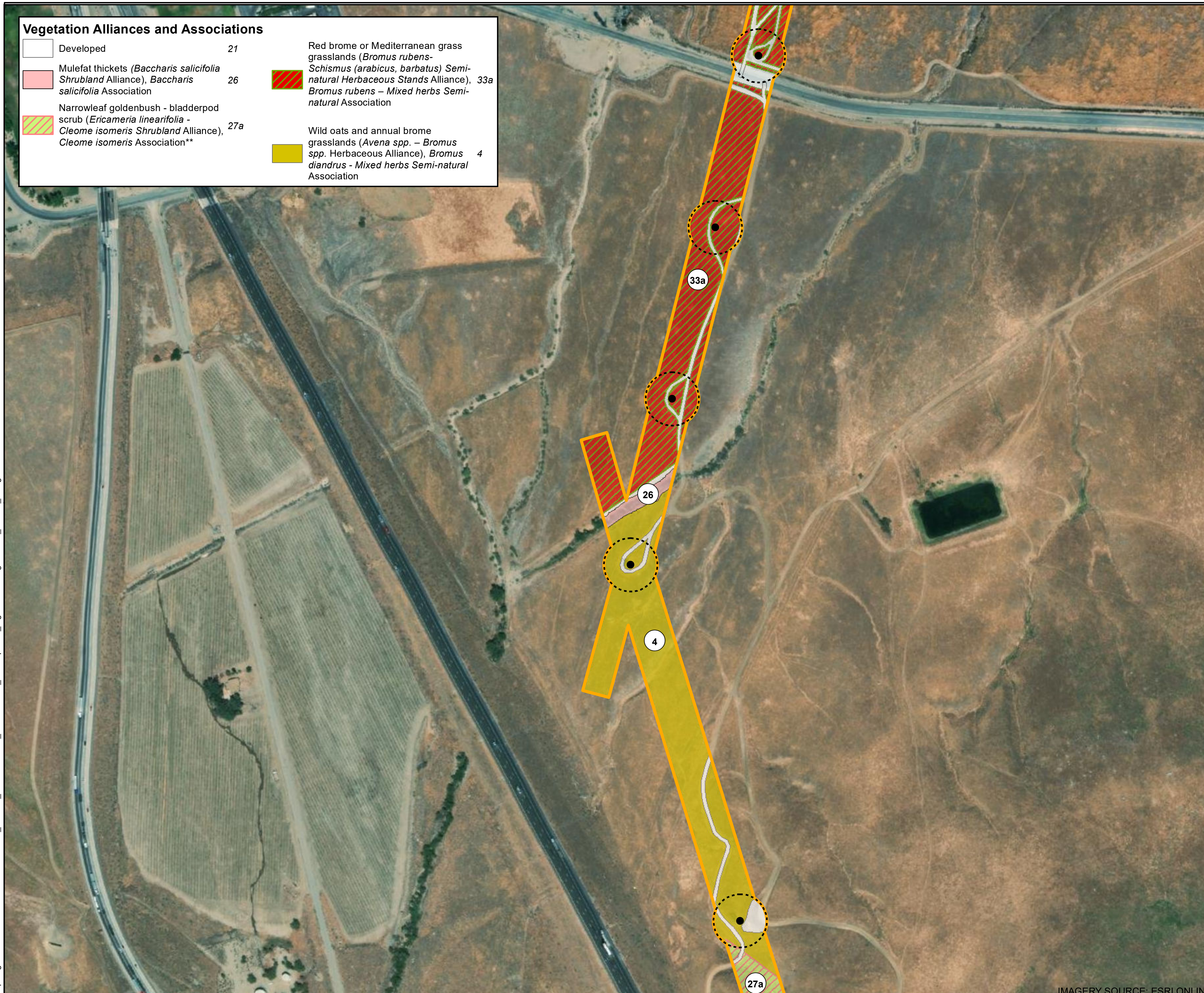

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

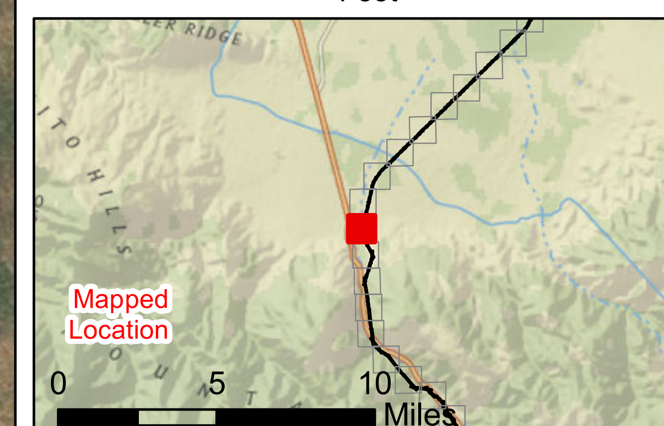
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022

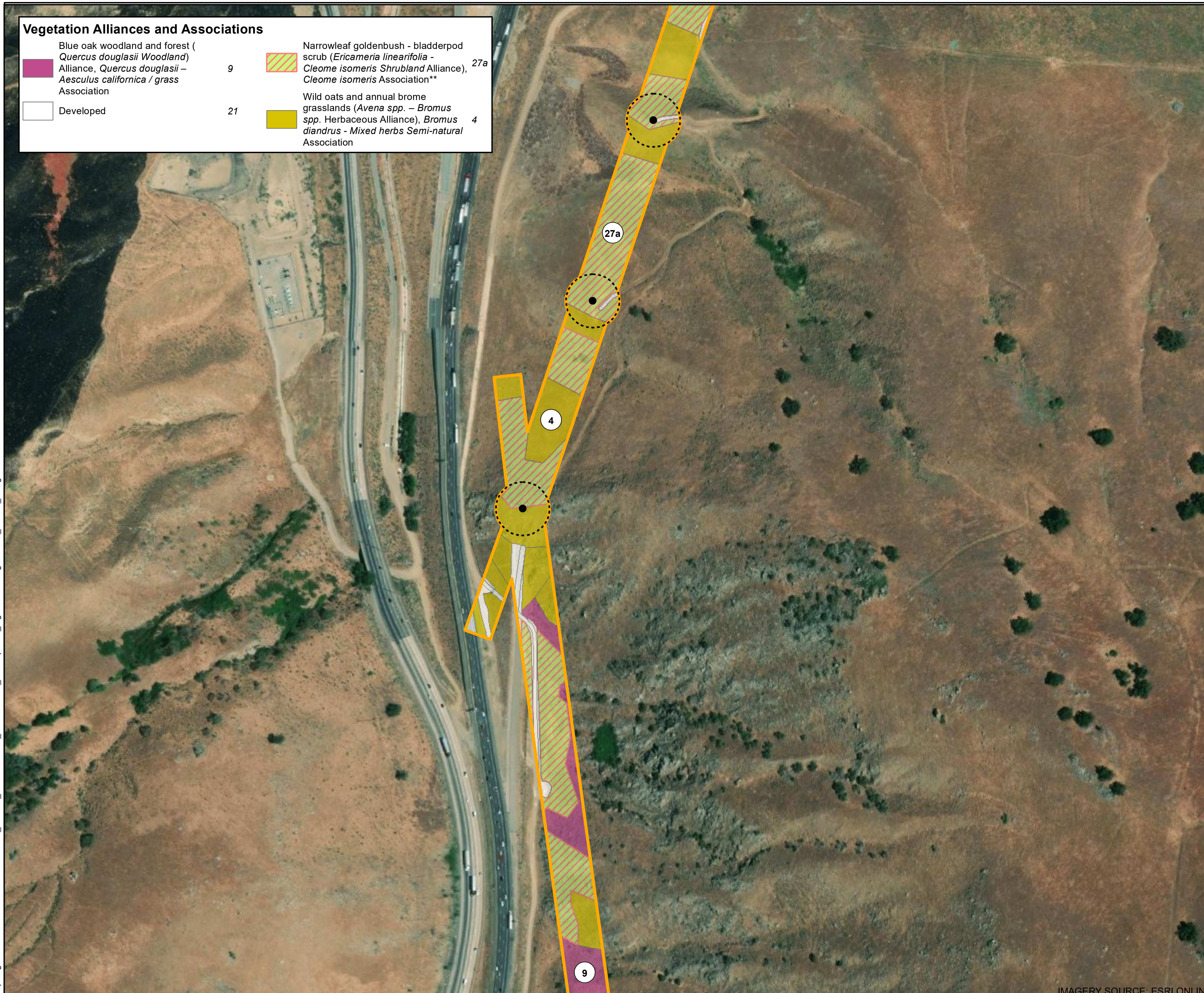

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

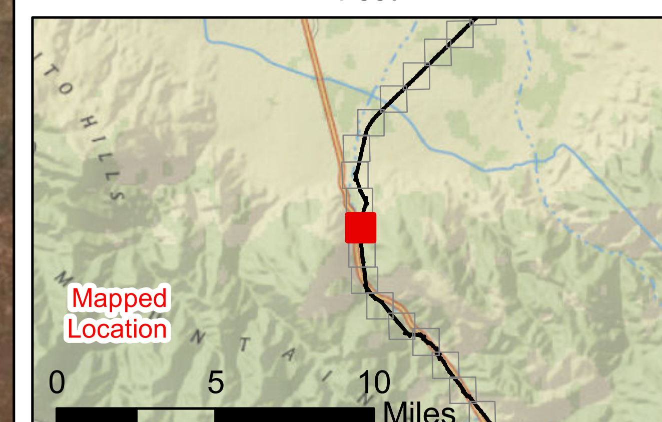
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



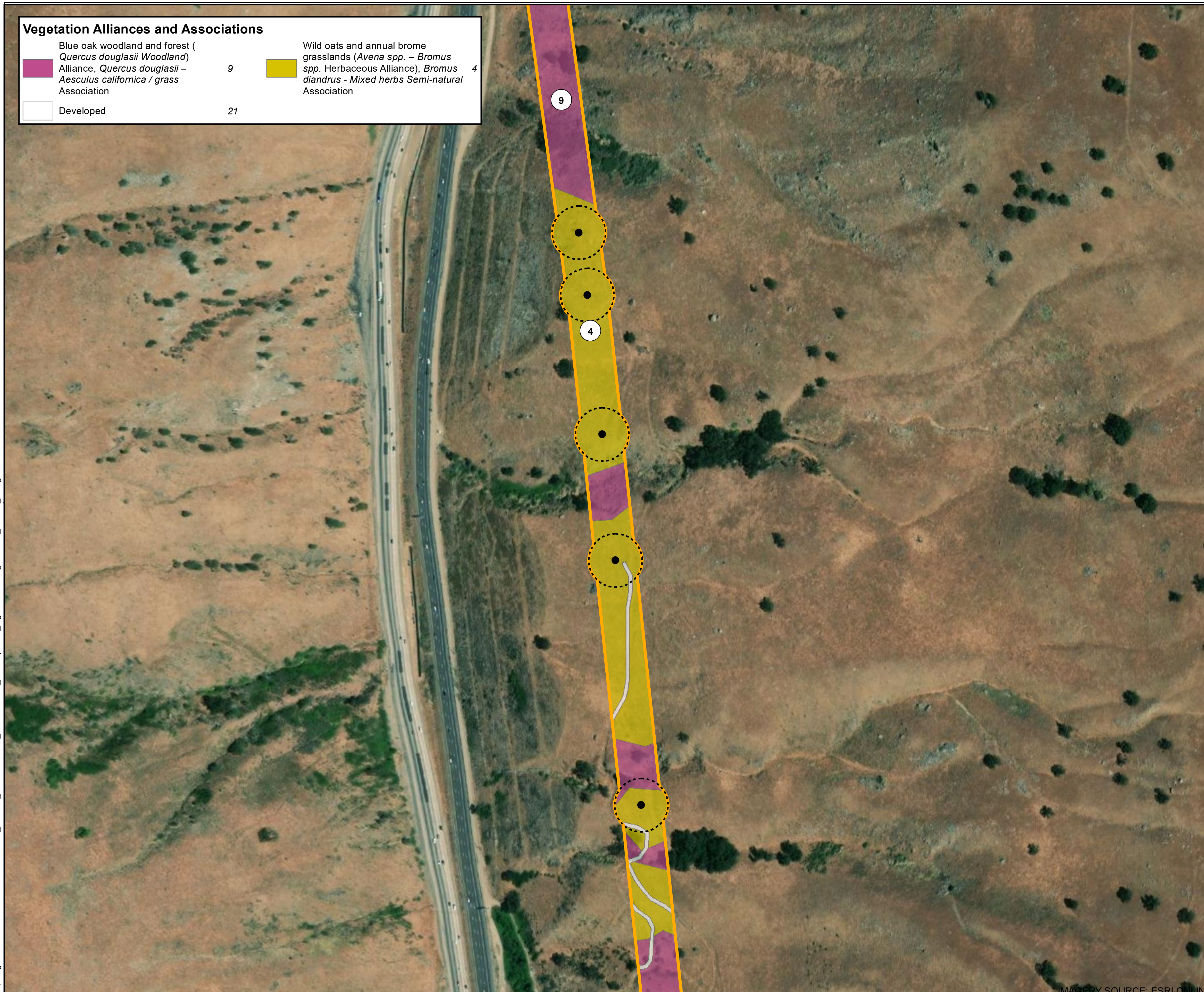

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

**FIGURESET**
**5.4-1**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

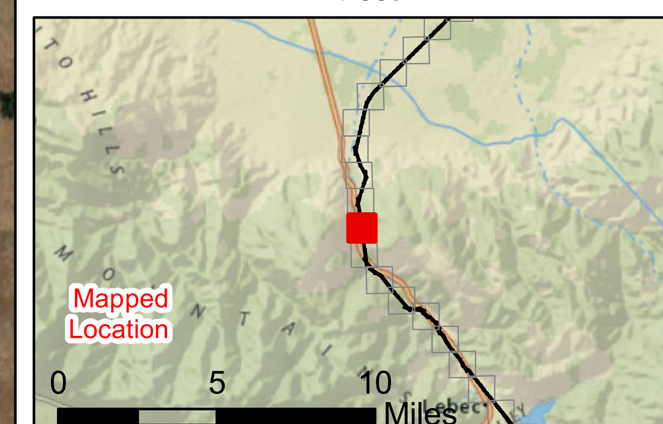
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



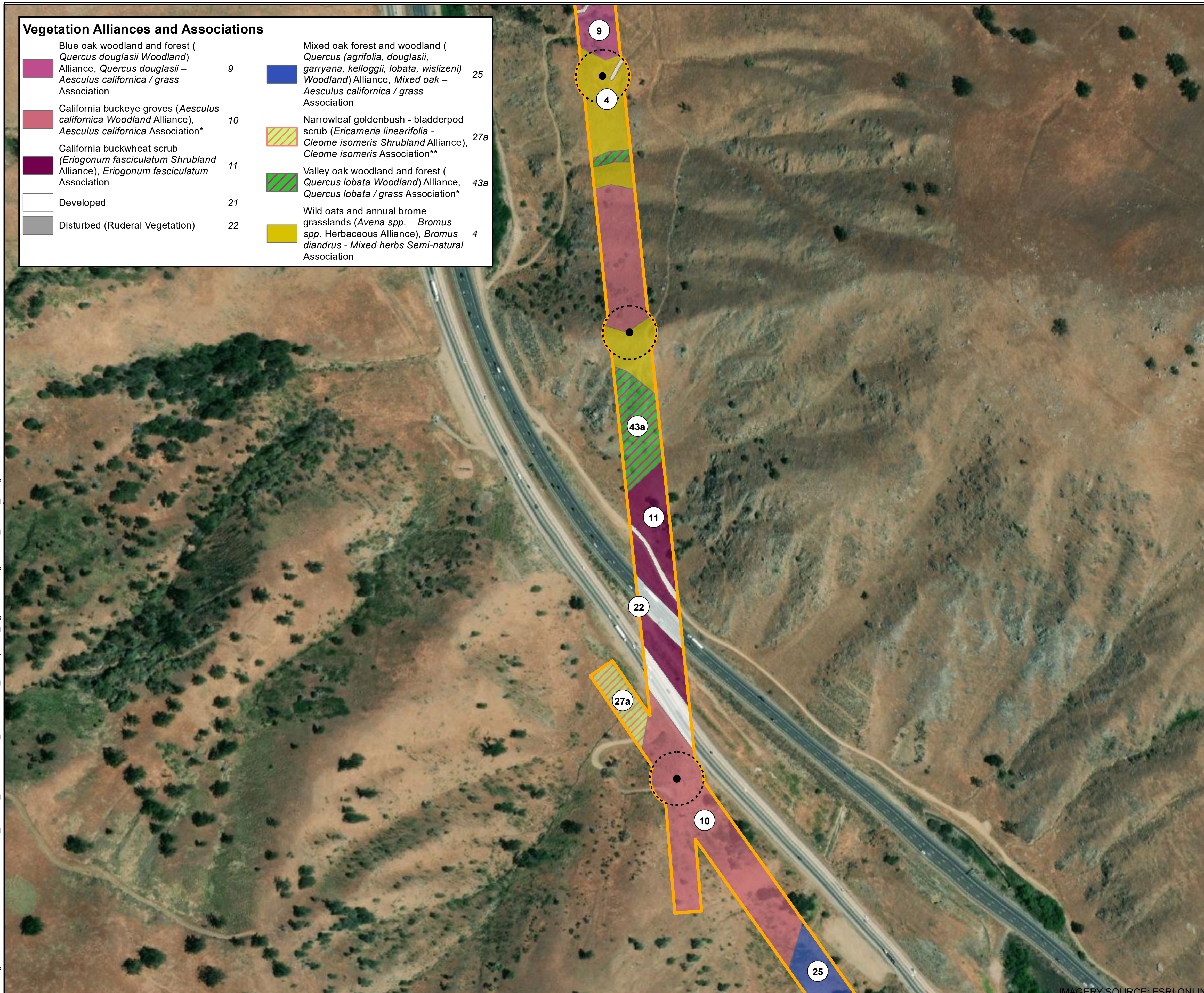

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET **5.4-1**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

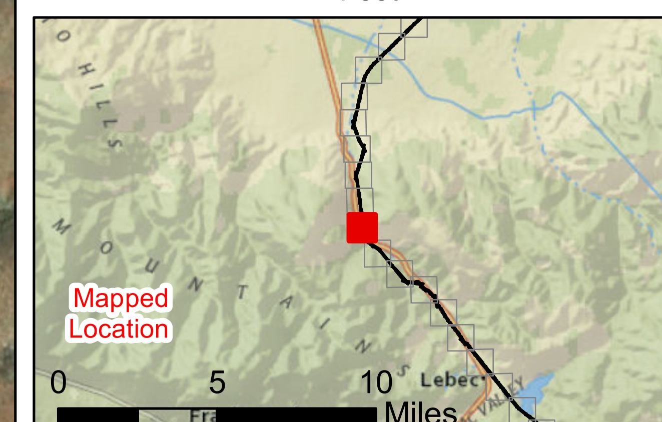
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



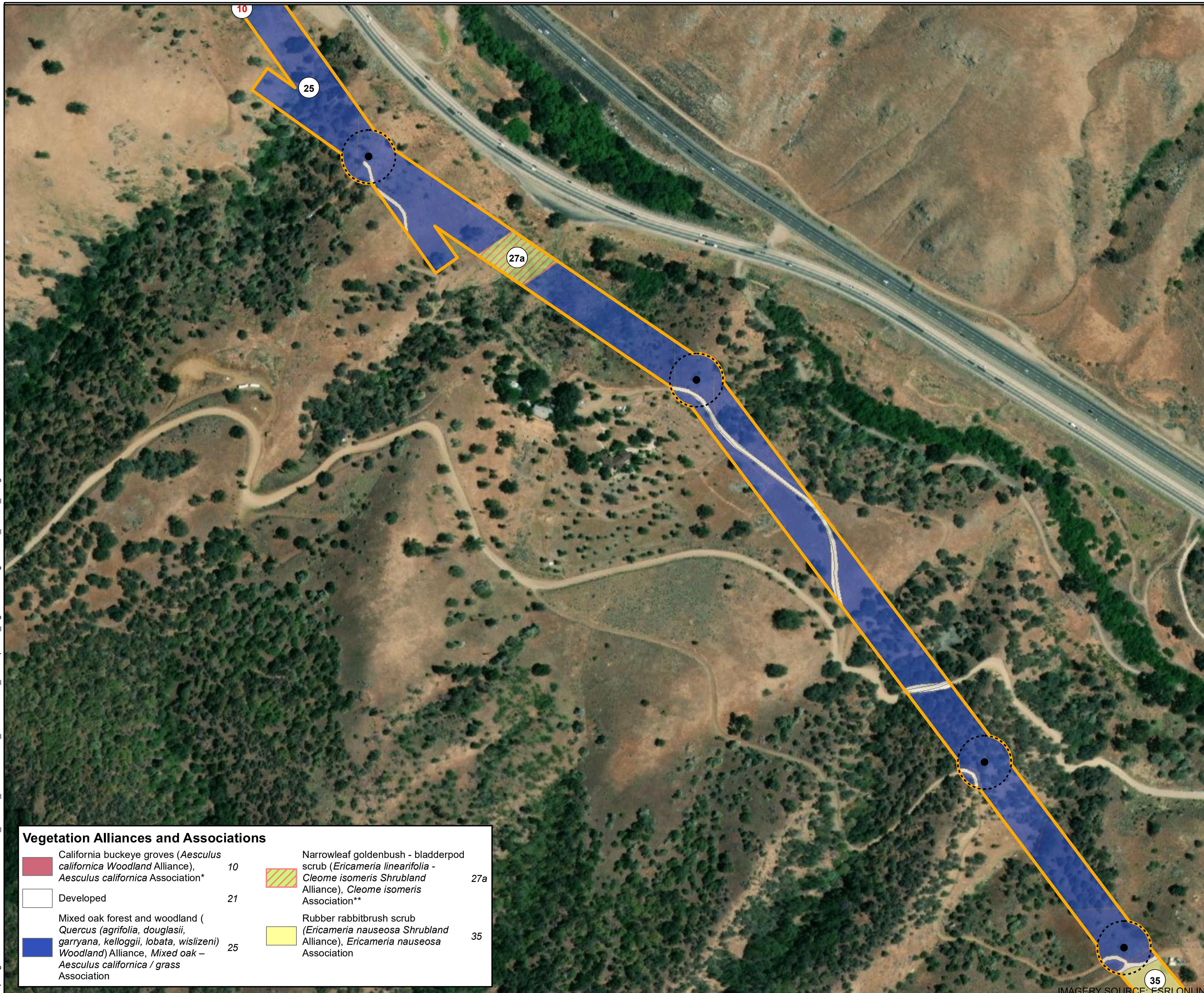

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




**Vegetation Alliances and Associations**

| Vegetation | Code |
|---|---|
| California buckeye groves (*Aesculus californica Woodland* Alliance), *Aesculus californica* Association* | 10 |
| Developed | 21 |
| Mixed oak forest and woodland ( *Quercus (agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni) Woodland*) Alliance, *Mixed oak – Aesculus californica / grass* Association | 25 |
| Narrowleaf goldenbush - bladderpod scrub (*Ericameria linearifolia - Cleome isomeris Shrubland* Alliance), *Cleome isomeris* Association** | 27a |
| Rubber rabbitbrush scrub (*Ericameria nauseosa Shrubland* Alliance), *Ericameria nauseosa* Association | 35 |

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

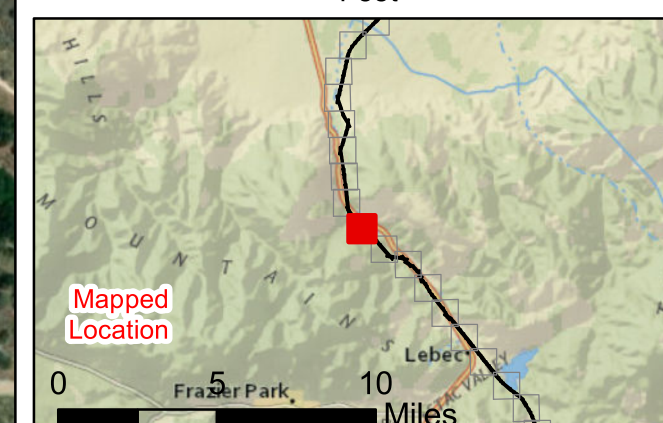
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

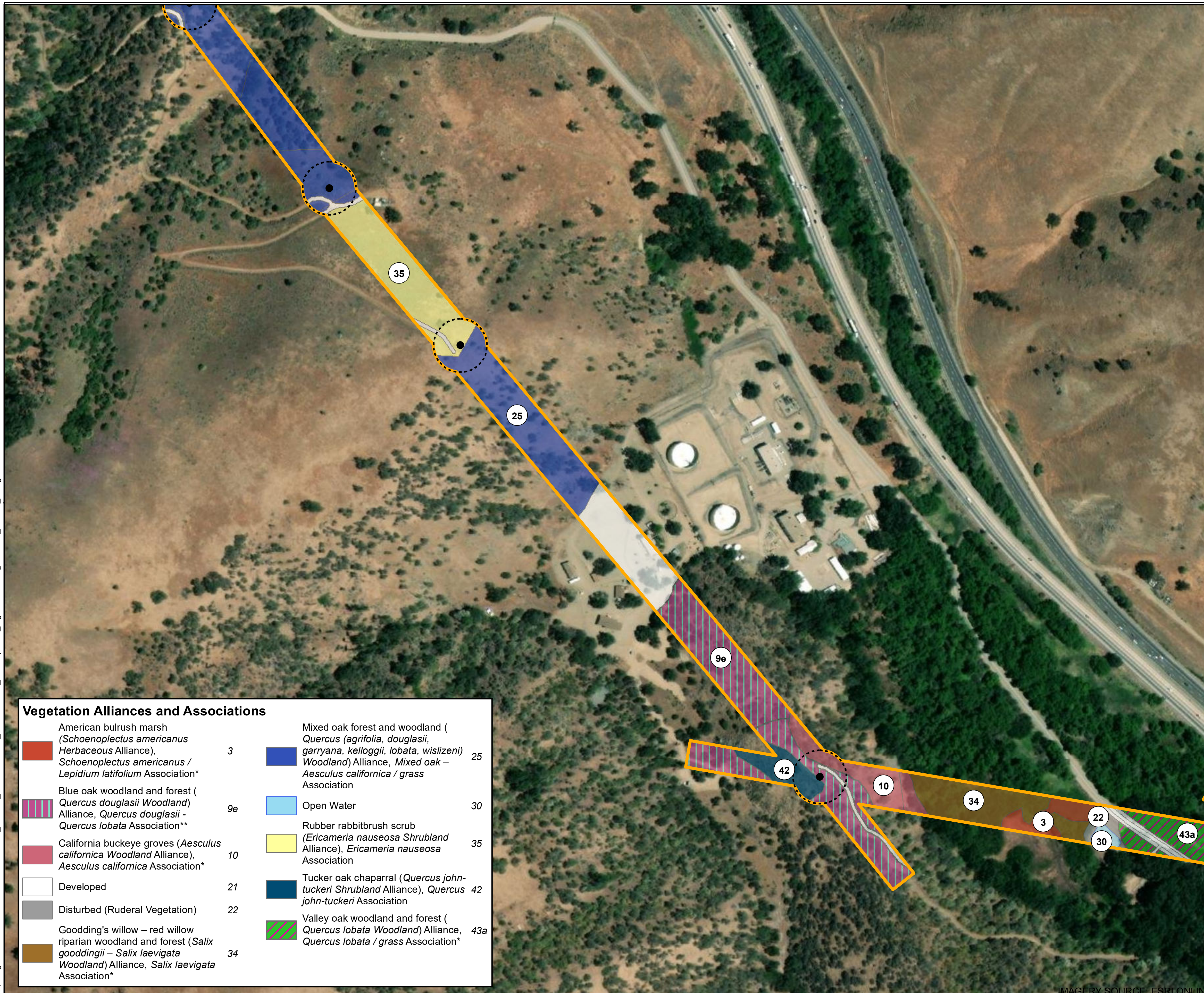
**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company

N

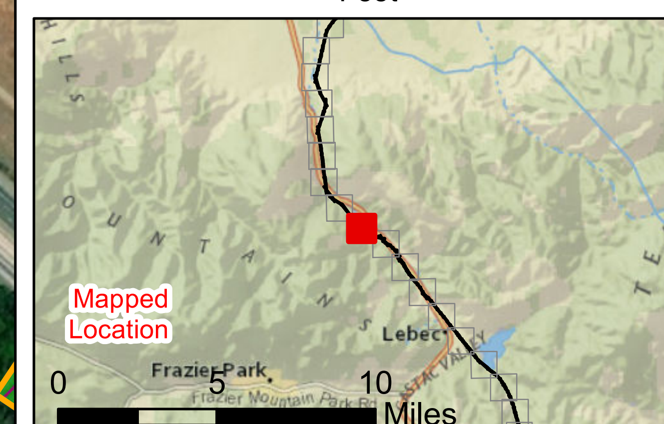



LEGEND

- ● STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



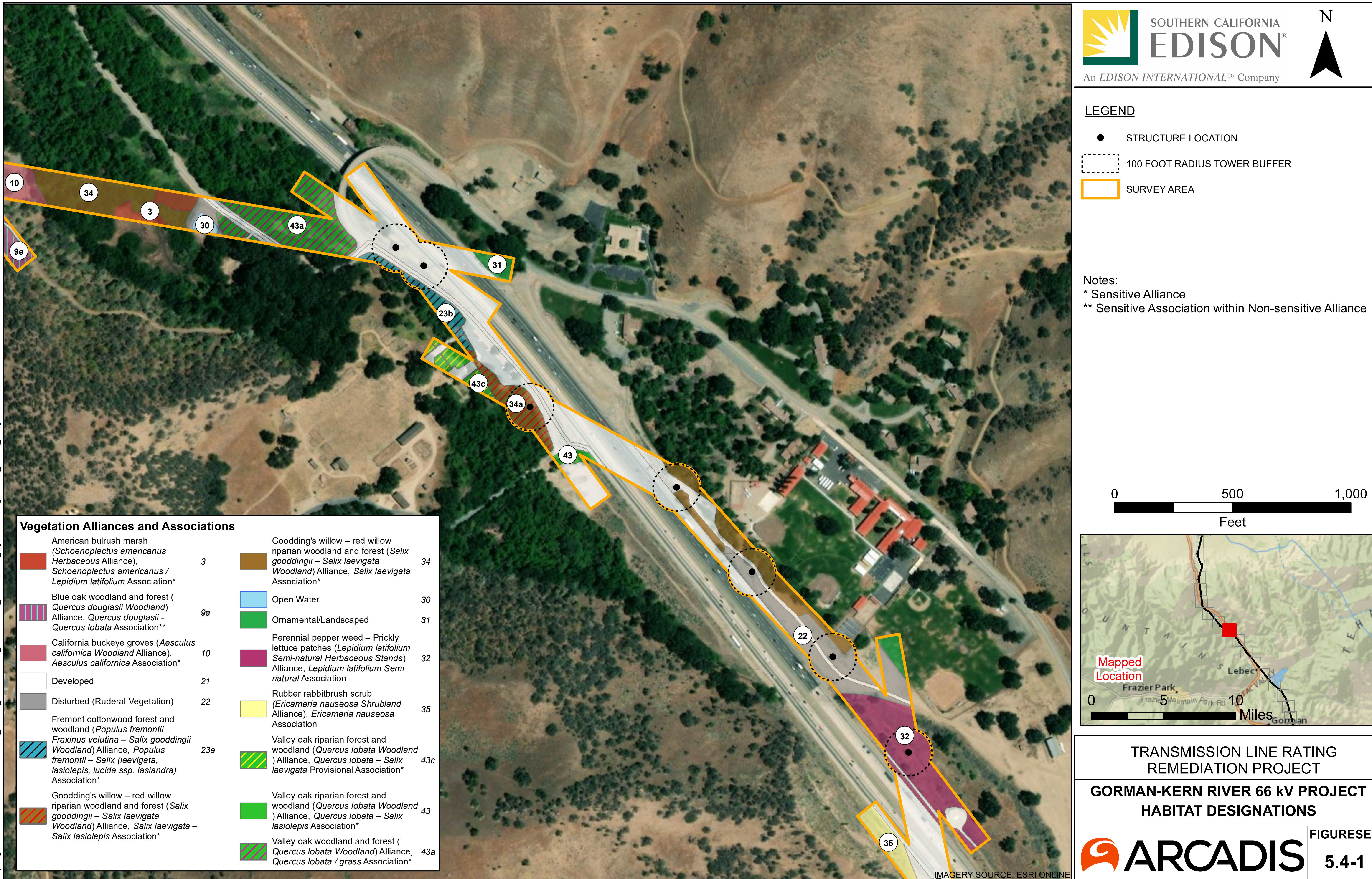

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

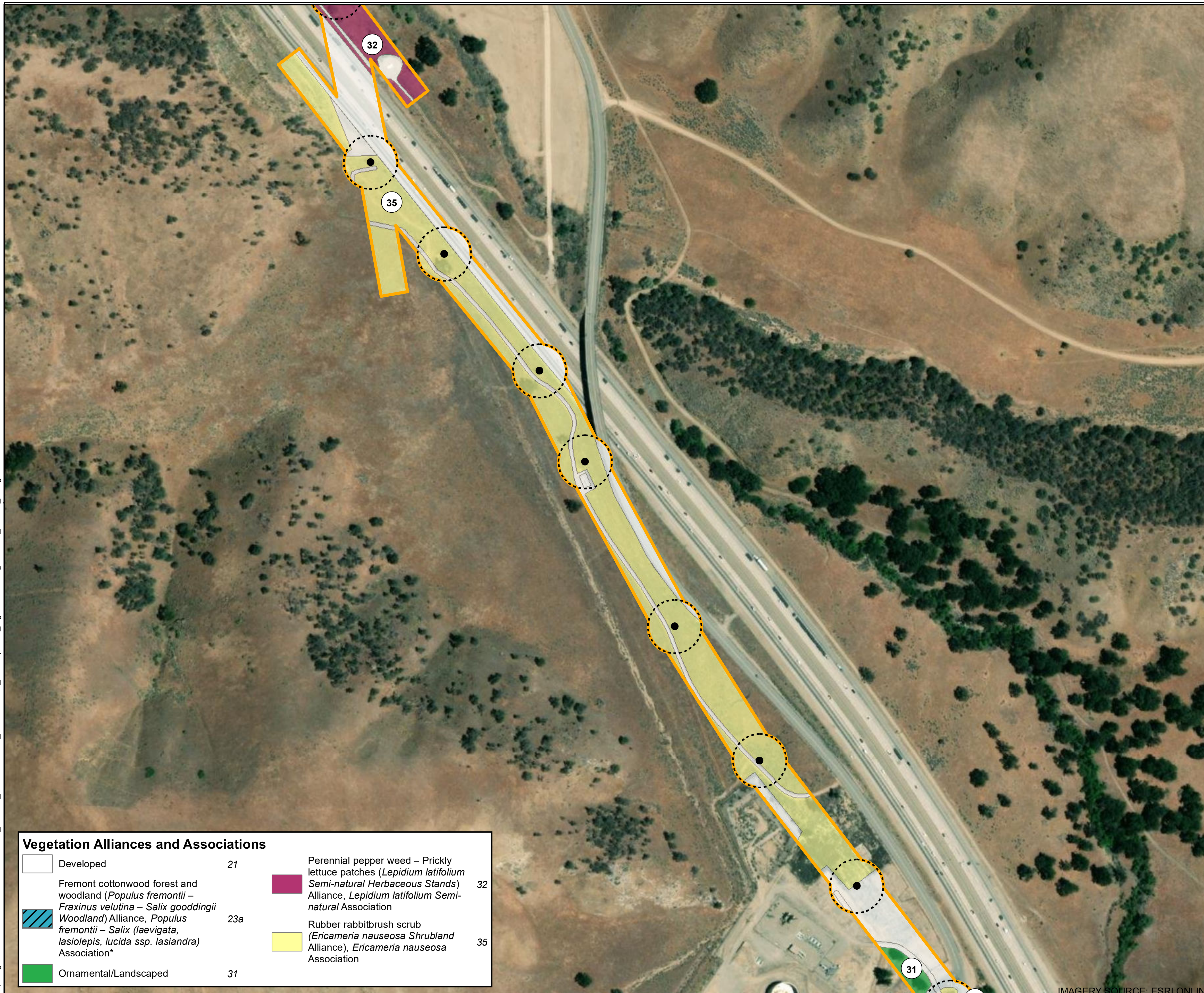
ARCADIS

FIGURESET 5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022



SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company
N
LEGEND
STRUCTURE LOCATION
100 FOOT RADIUS TOWER BUFFER
SURVEY AREA
Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance
0 500 1,000
Feet
Mapped Location
Frazier Park
Lebec
Gorman
0 5 10
Miles
Vegetation Alliances and Associations
American bulrush marsh (Schoenoplectus americanus Herbaceous Alliance), Schoenoplectus americanus / Lepidium latifolium Association* 3
Blue oak woodland and forest (Quercus douglasii Woodland) Alliance, Quercus douglasii - Quercus lobata Association** 9e
California buckeye groves (Aesculus californica Woodland Alliance), Aesculus californica Association* 10
Developed 21
Disturbed (Ruderal Vegetation) 22
Fremont cottonwood forest and woodland (Populus fremontii – Fraxinus velutina – Salix gooddingii Woodland) Alliance, Populus fremontii – Salix (laevigata, lasiolepis, lucida ssp. lasiandra) Association* 23a
Gooding's willow – red willow riparian woodland and forest (Salix gooddingii – Salix laevigata Woodland) Alliance, Salix laevigata – Salix lasiolepis Association* 34a
Gooding's willow – red willow riparian woodland and forest (Salix gooddingii – Salix laevigata Woodland) Alliance, Salix laevigata Association* 34
Open Water 30
Ornamental/Landscaped 31
Perennial pepper weed – Prickly lettuce patches (Lepidium latifolium Semi-natural Herbaceous Stands) Alliance, Lepidium latifolium Semi-natural Association 32
Rubber rabbitbrush scrub (Ericameria nauseosa Shrubland Alliance), Ericameria nauseosa Association 35
Valley oak riparian forest and woodland (Quercus lobata Woodland) Alliance, Quercus lobata – Salix laevigata Provisional Association* 43c
Valley oak riparian forest and woodland (Quercus lobata Woodland) Alliance, Quercus lobata – Salix lasiolepis Association* 43
Valley oak woodland and forest (Quercus lobata Woodland) Alliance, Quercus lobata / grass Association* 43a
IMAGERY SOURCE: ESRI ONLINE
TRANSMISSION LINE RATING REMEDIATION PROJECT
GORMAN-KERN RIVER 66 kV PROJECT
HABITAT DESIGNATIONS
ARCADIS
FIGURESET 5.4-1
\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company

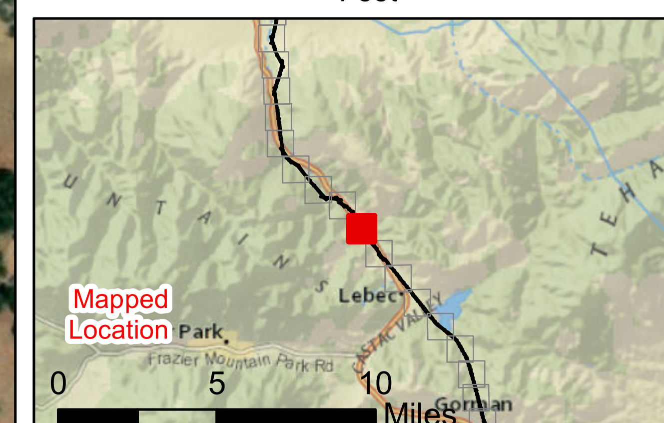
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet

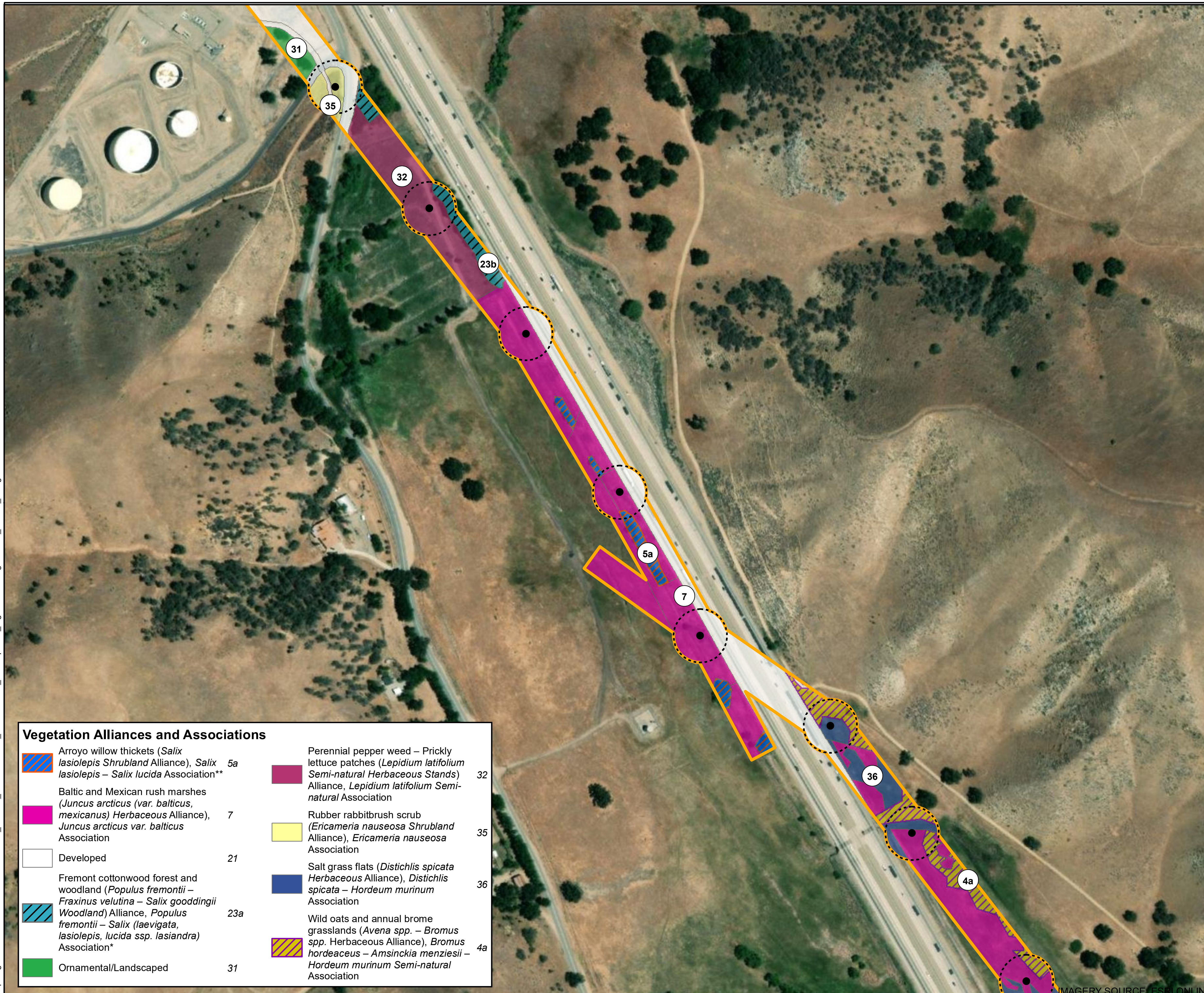



TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

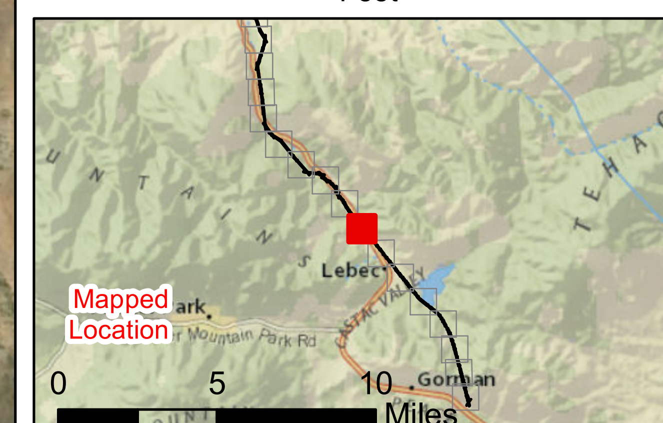
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet

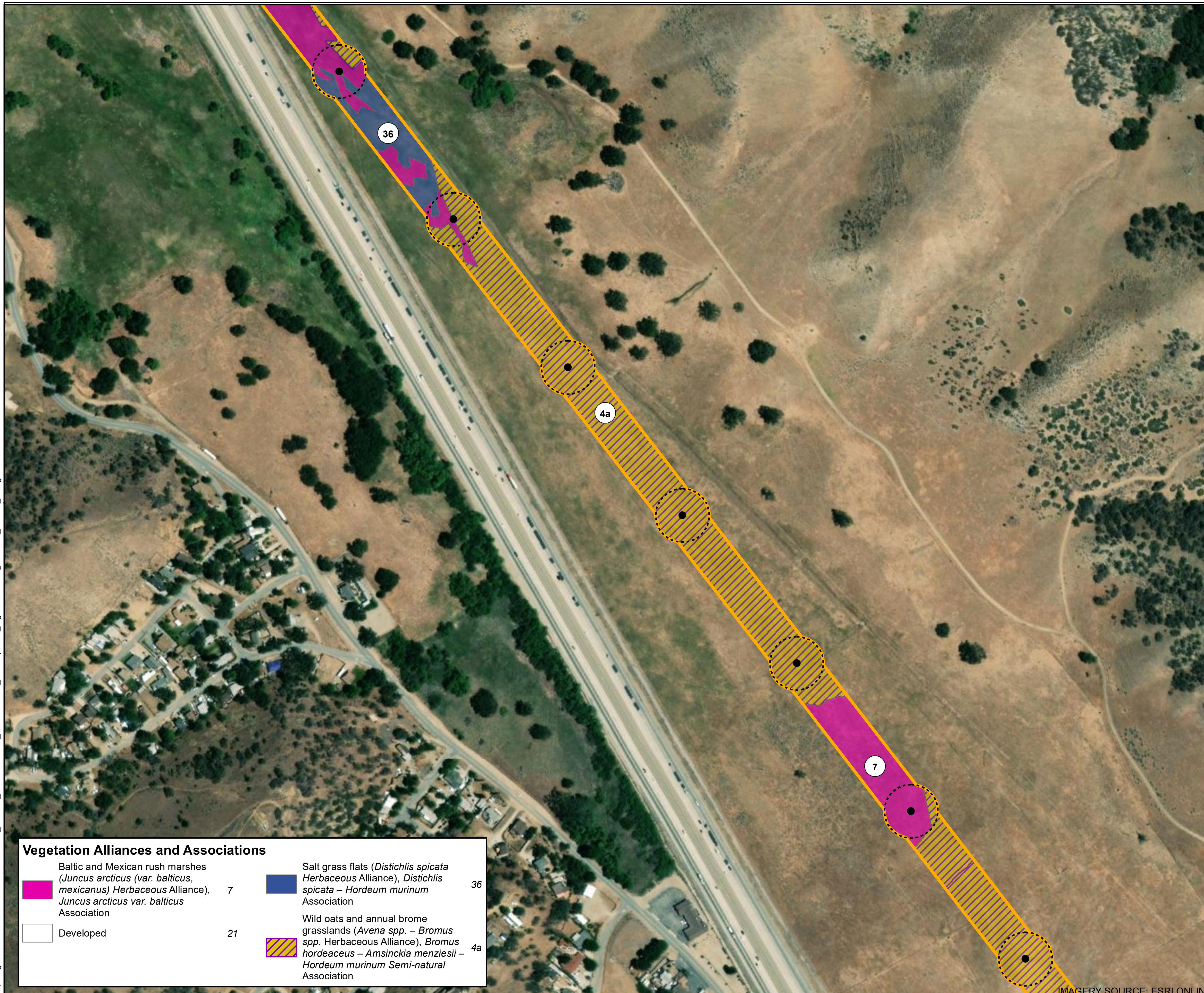



TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

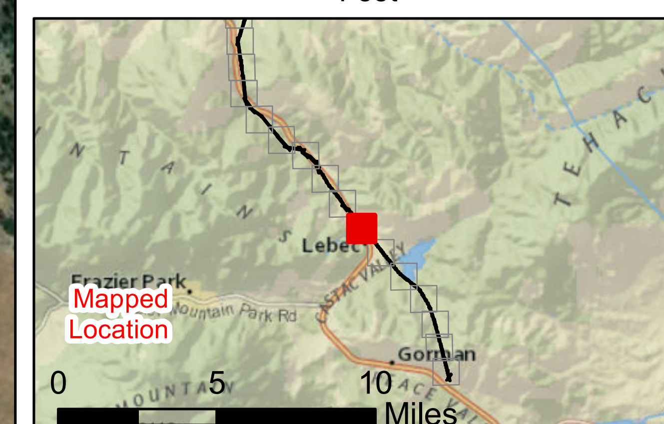
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



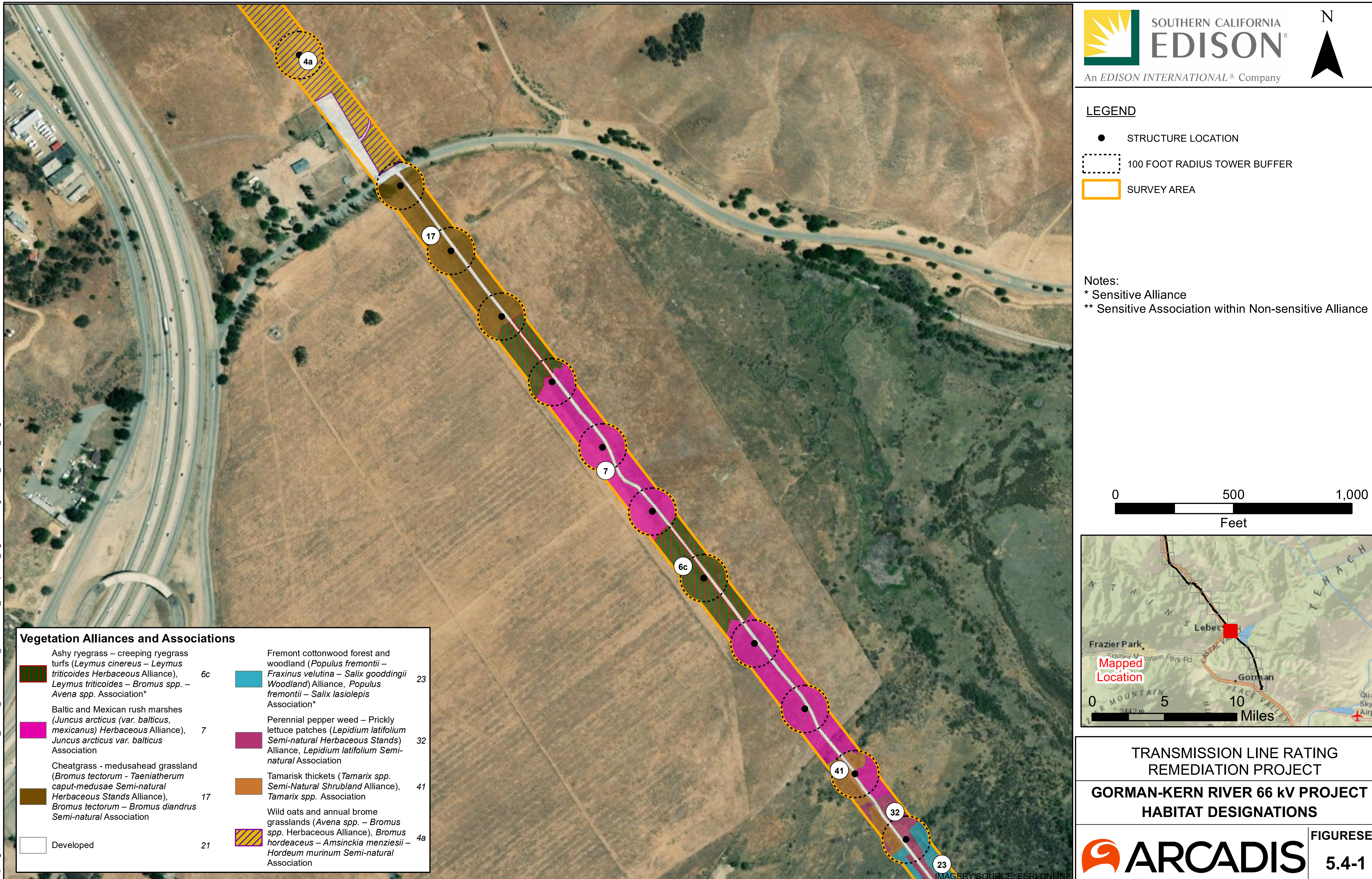

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

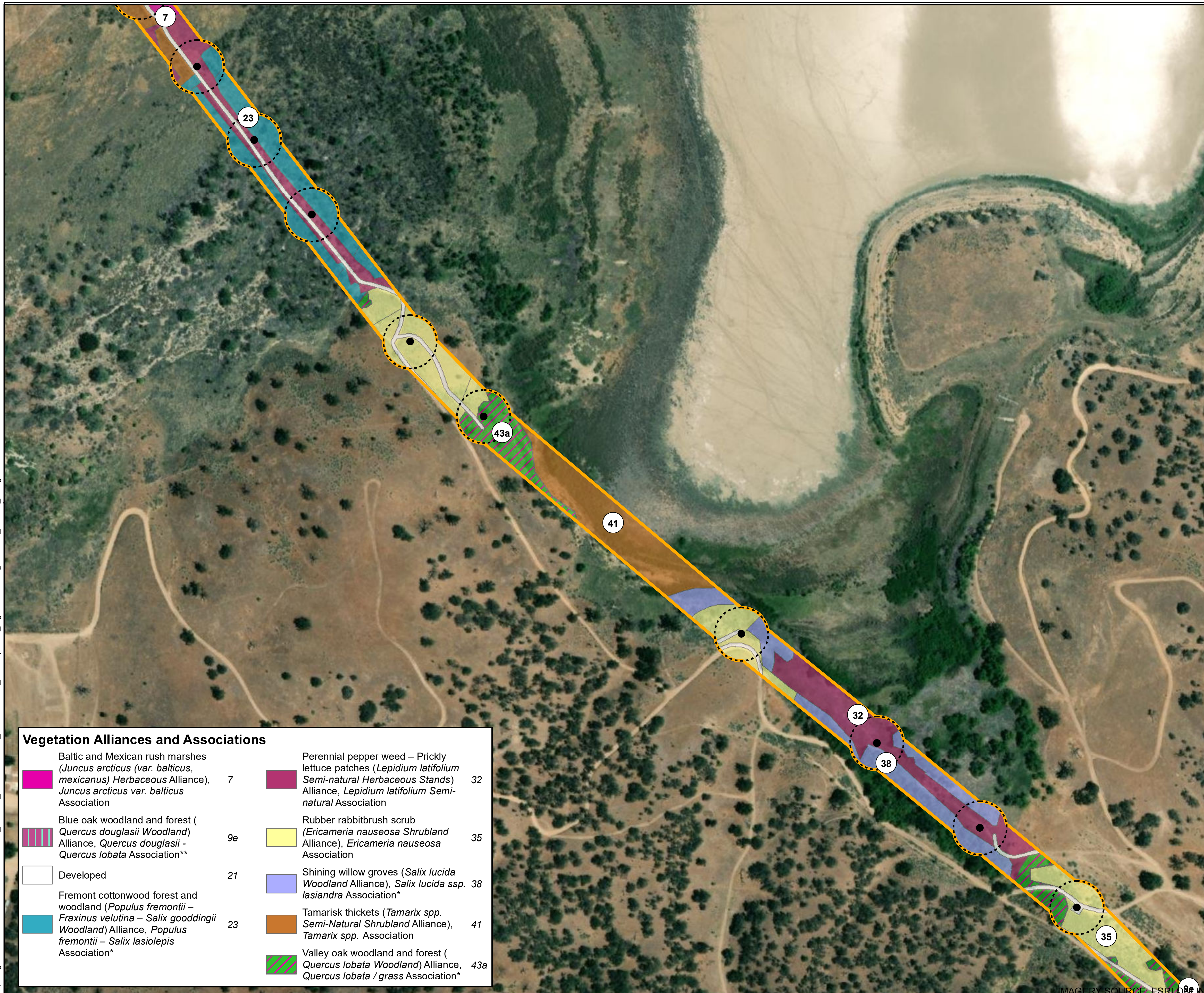
ARCADIS

FIGURESET
5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

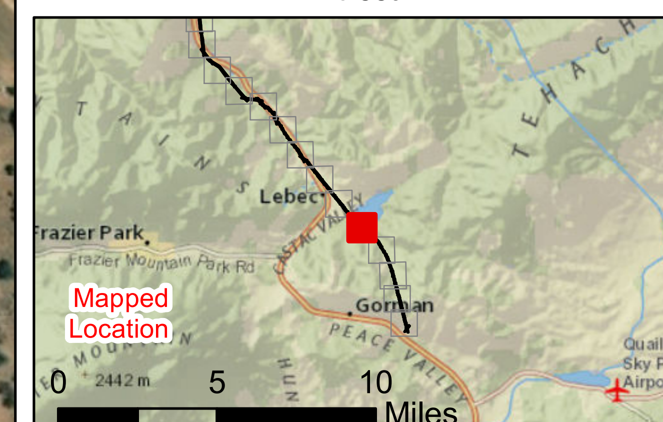
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022

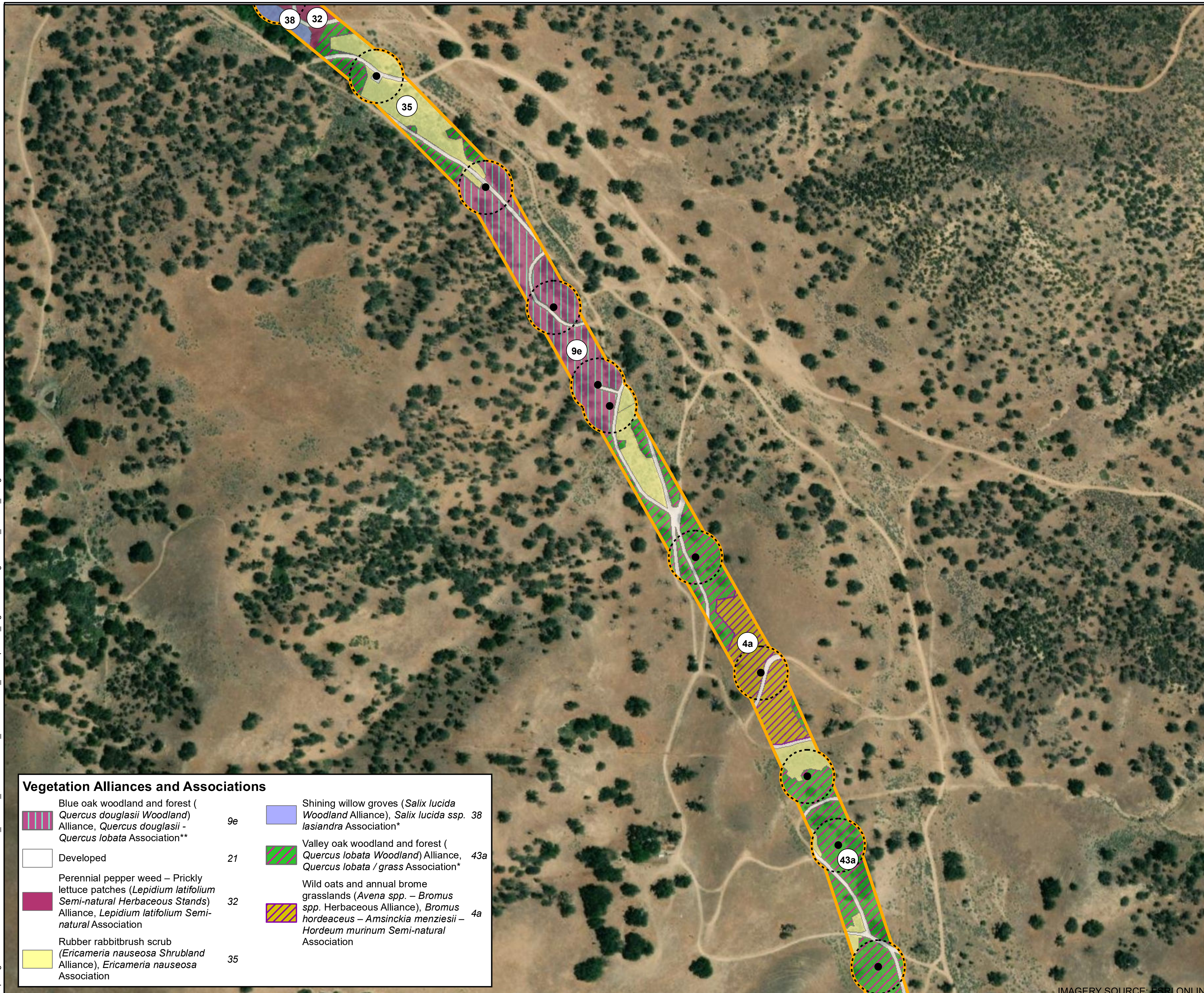
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

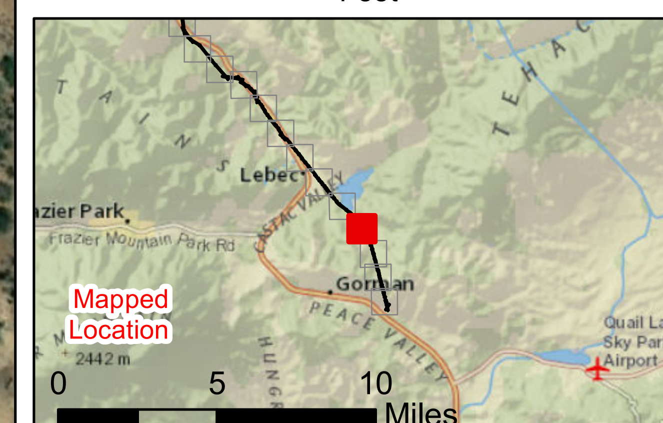
Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance




**Vegetation Alliances and Associations**

| Vegetation | Code |
|---|---|
| Blue oak woodland and forest (*Quercus douglasii Woodland*) Alliance, *Quercus douglasii - Quercus lobata* Association** | 9e |
| Developed | 21 |
| Perennial pepper weed – Prickly lettuce patches (*Lepidium latifolium Semi-natural Herbaceous Stands*) Alliance, *Lepidium latifolium Semi-natural* Association | 32 |
| Rubber rabbitbrush scrub (*Ericameria nauseosa Shrubland* Alliance), *Ericameria nauseosa* Association | 35 |
| Shining willow groves (*Salix lucida Woodland* Alliance), *Salix lucida ssp. lasiandra* Association* | 38 |
| Valley oak woodland and forest (*Quercus lobata Woodland*) Alliance, *Quercus lobata / grass* Association* | 43a |
| Wild oats and annual brome grasslands (*Avena spp. – Bromus spp.* Herbaceous Alliance), *Bromus hordeaceus – Amsinckia menziesii – Hordeum murinum Semi-natural* Association | 4a |

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

**FIGURESET**
**5.4-1**

\\corpargis\Data\ArcGisData\GIS\PROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

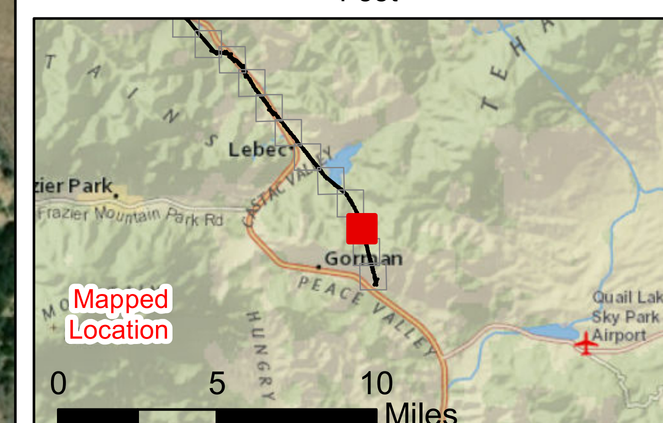
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



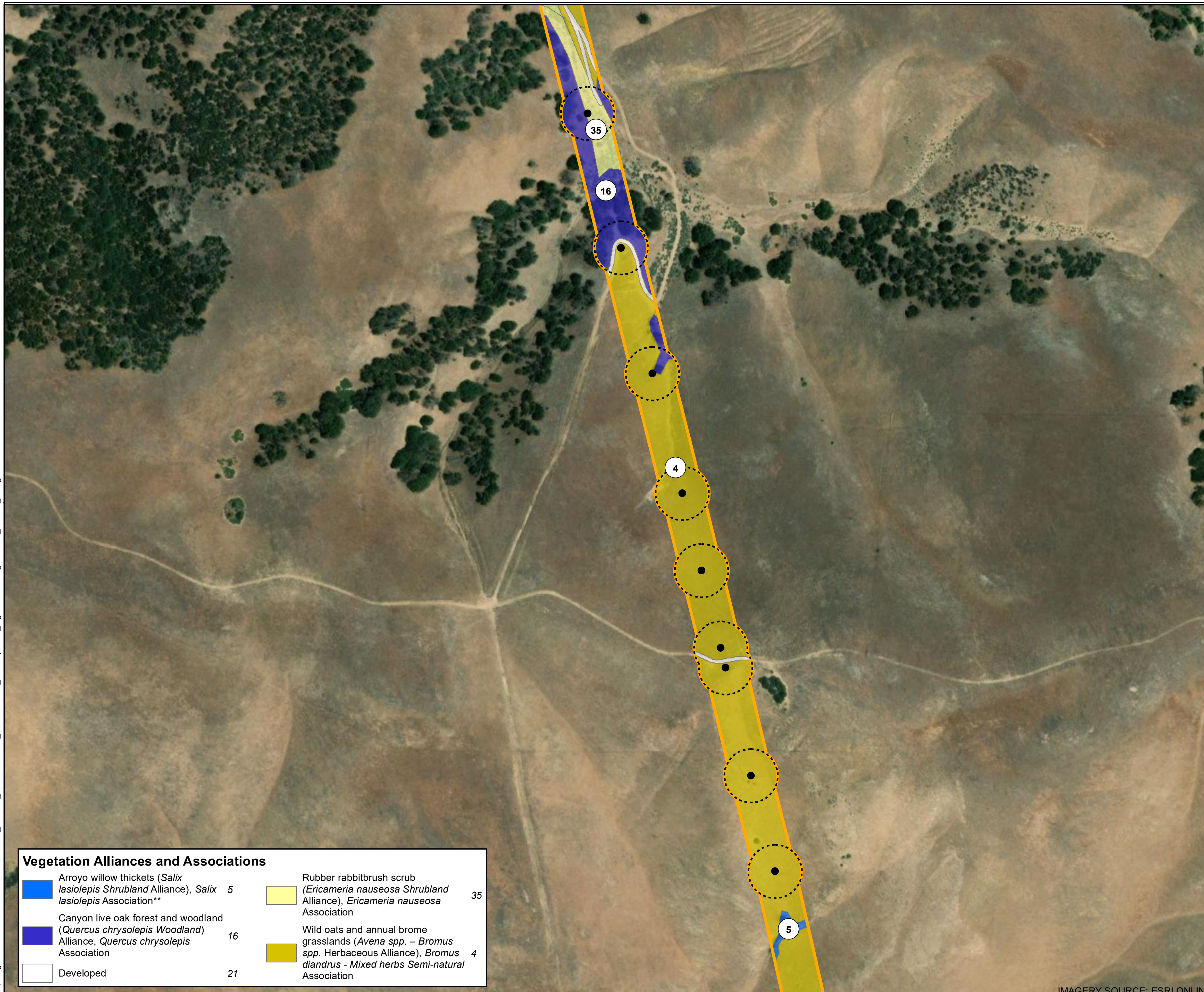

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

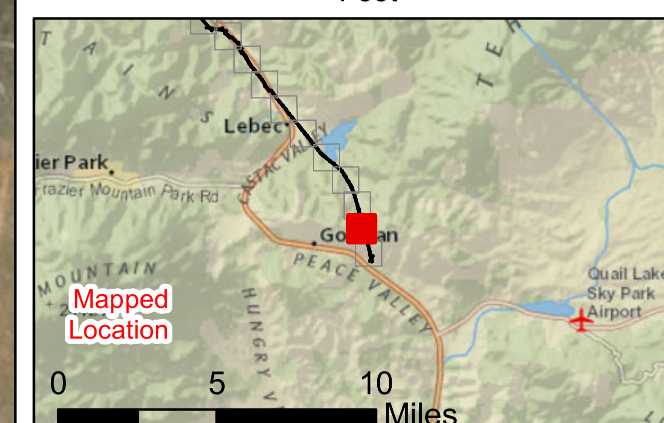
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



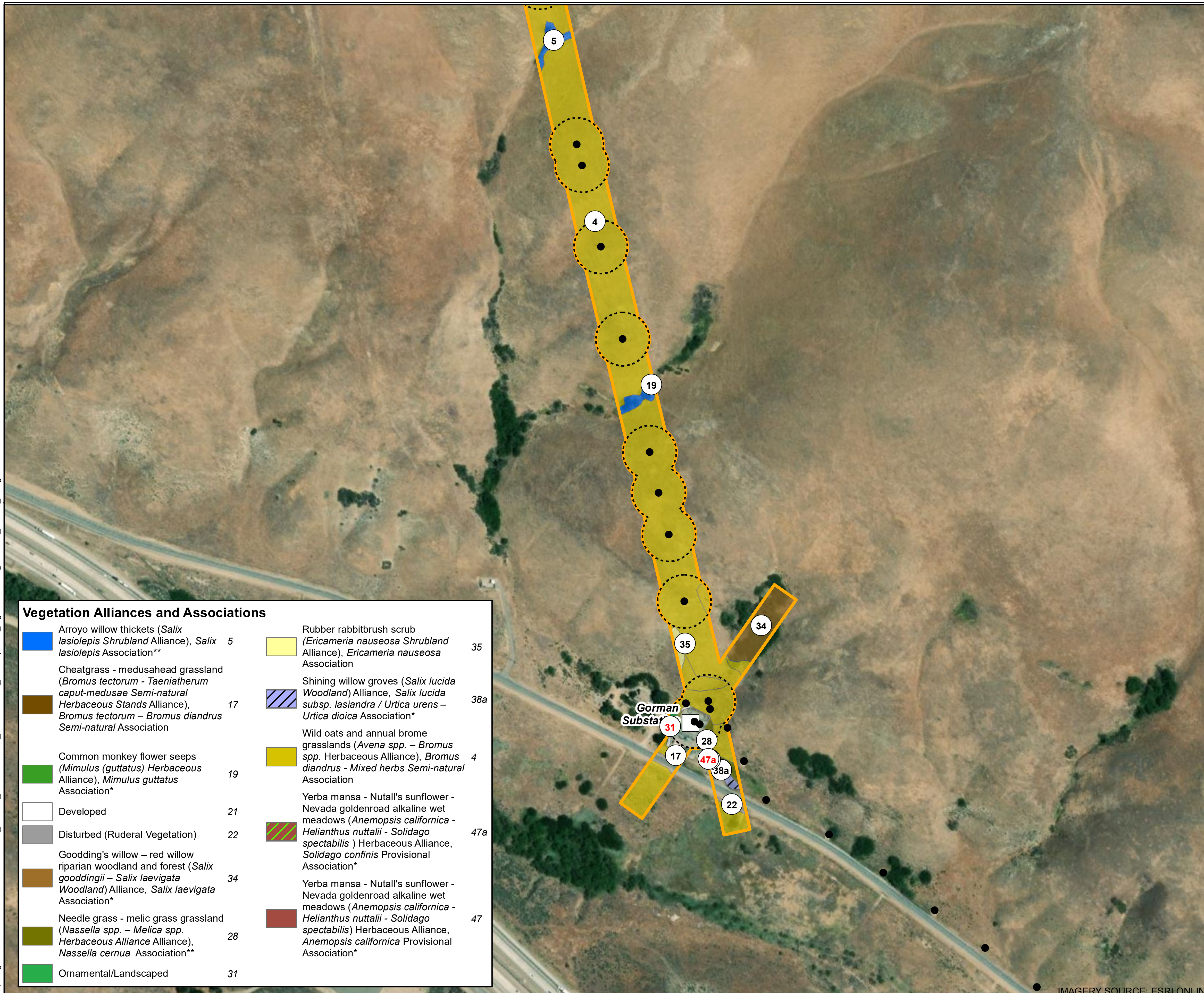

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022

SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

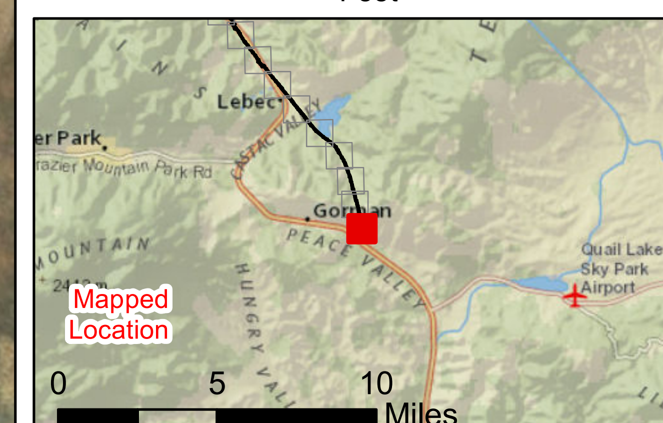
N

LEGEND

- STRUCTURE LOCATION
- SUBSTATION LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet

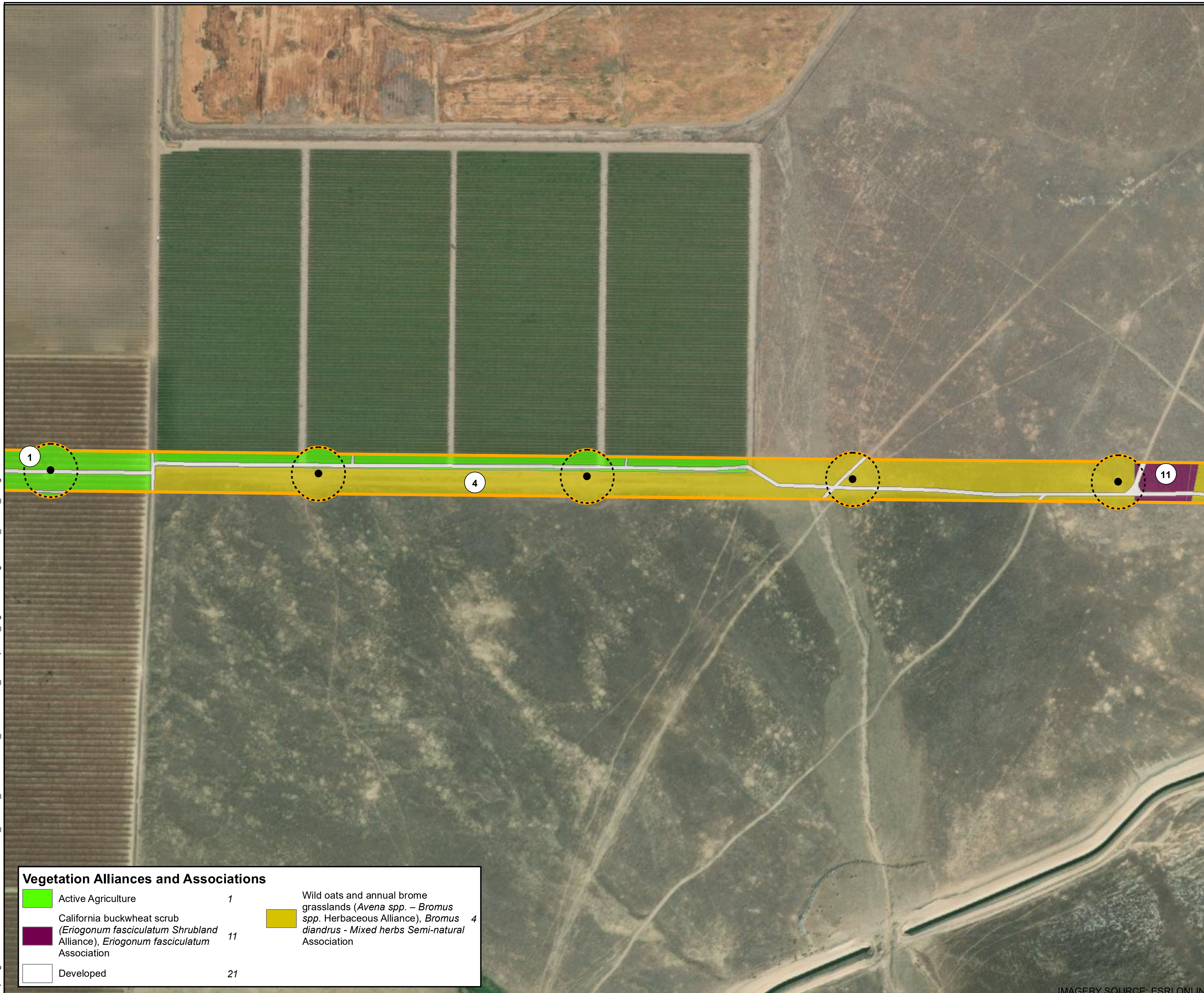



TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

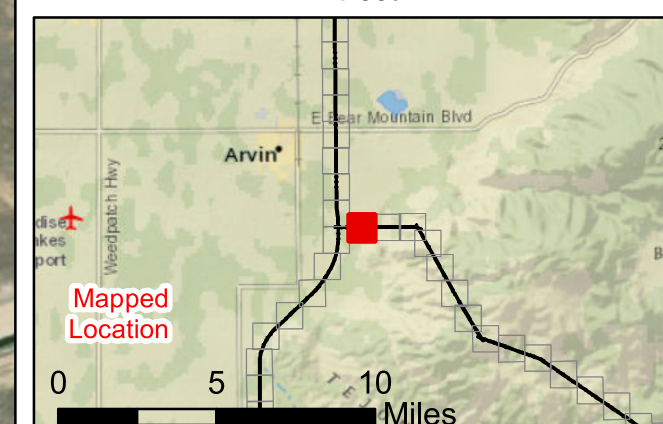
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



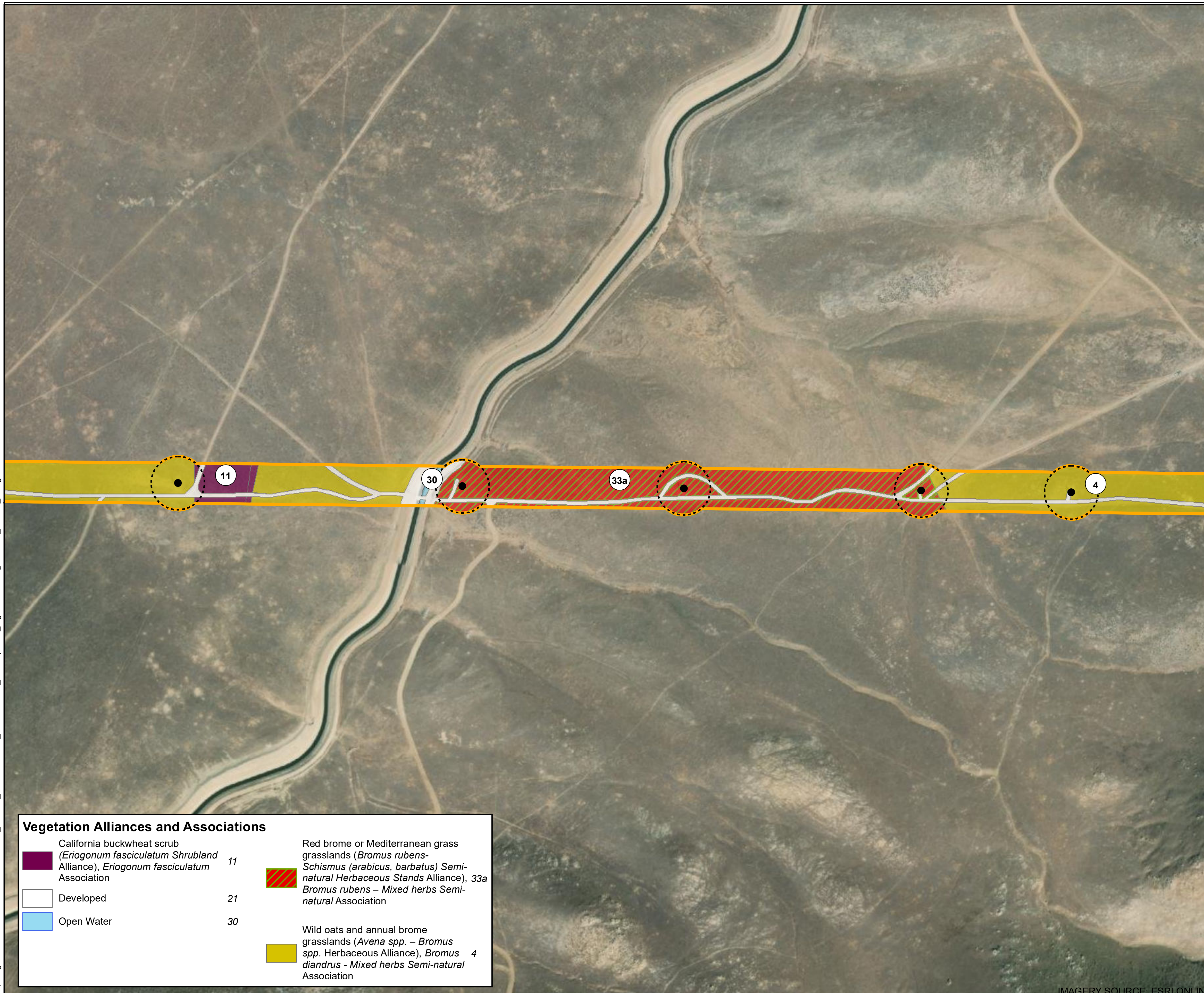

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company

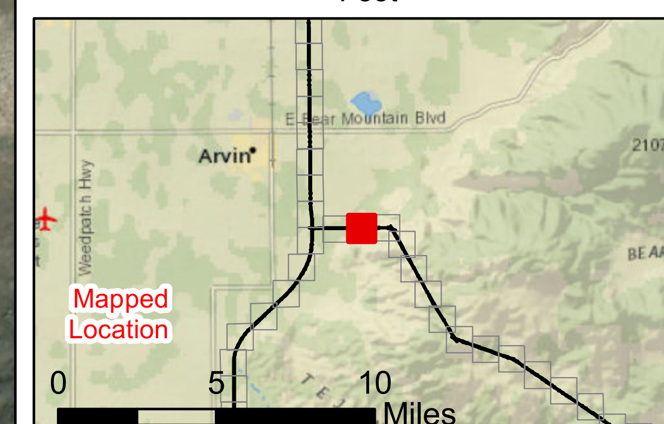
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



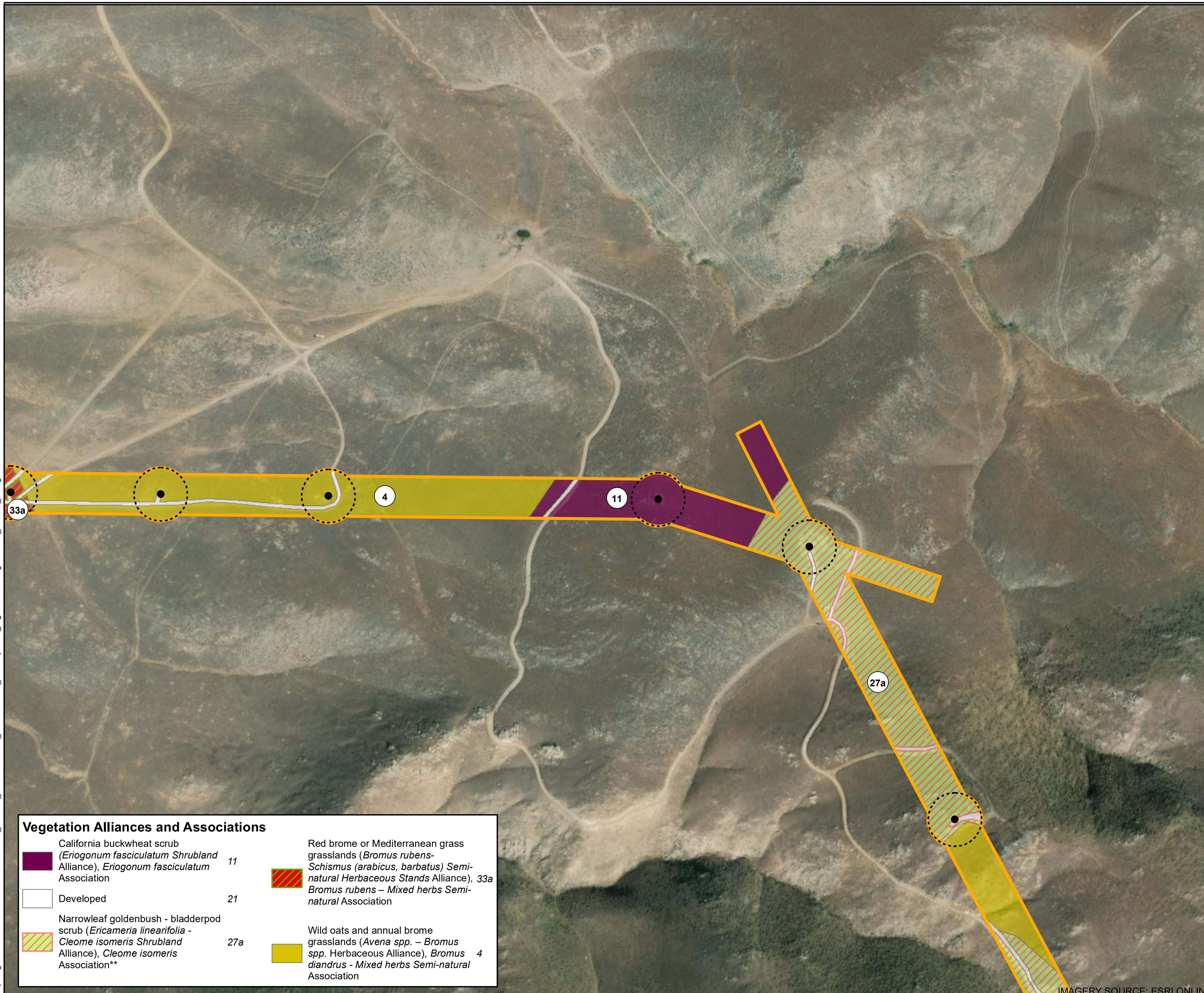

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

**FIGURESET**
**5.4-1**

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company



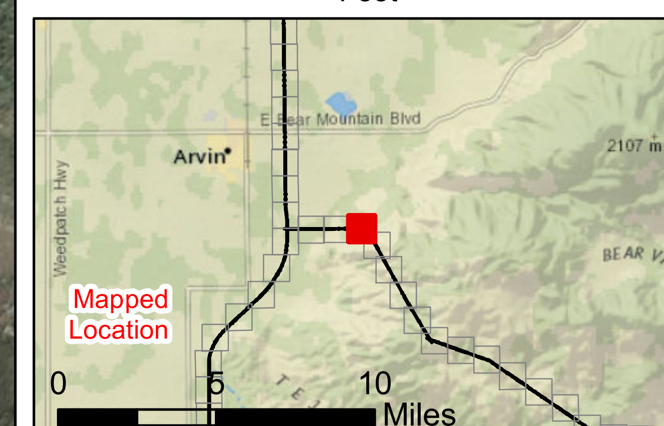

N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



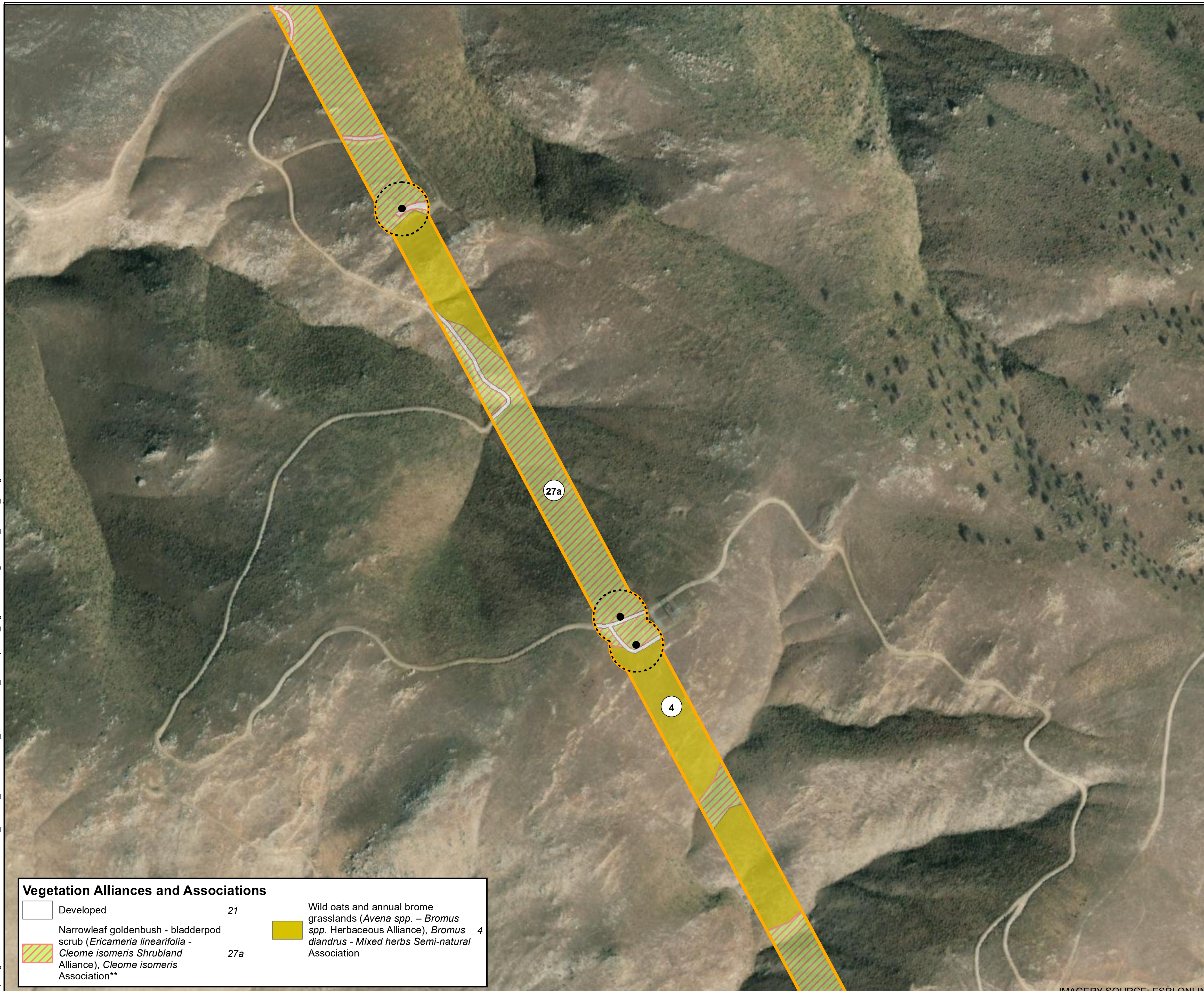

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
**5.4-1**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON

An *EDISON INTERNATIONAL*® Company

N

LEGEND

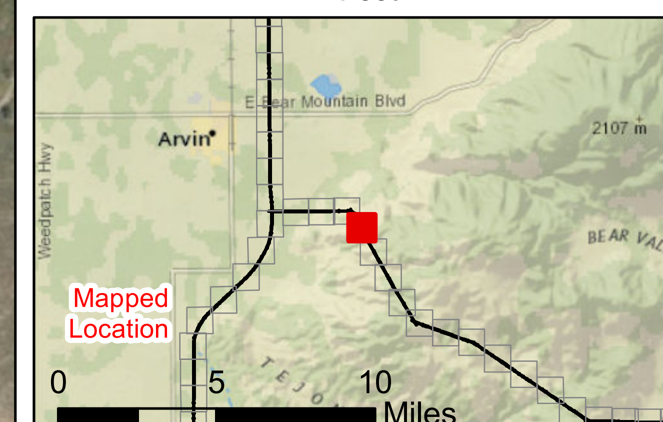
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON®

An EDISON INTERNATIONAL® Company

N

LEGEND

STRUCTURE LOCATION

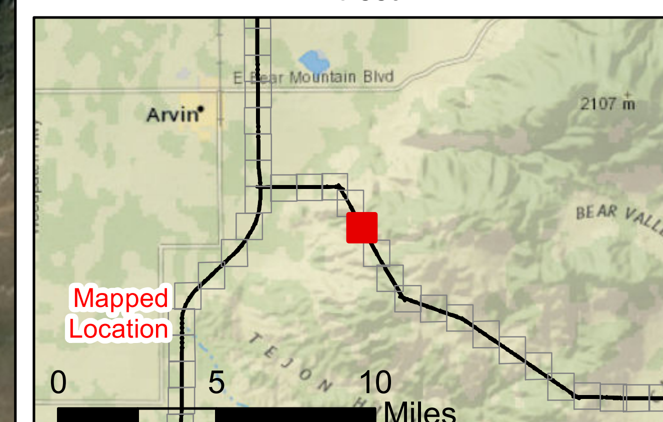
100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000

Feet



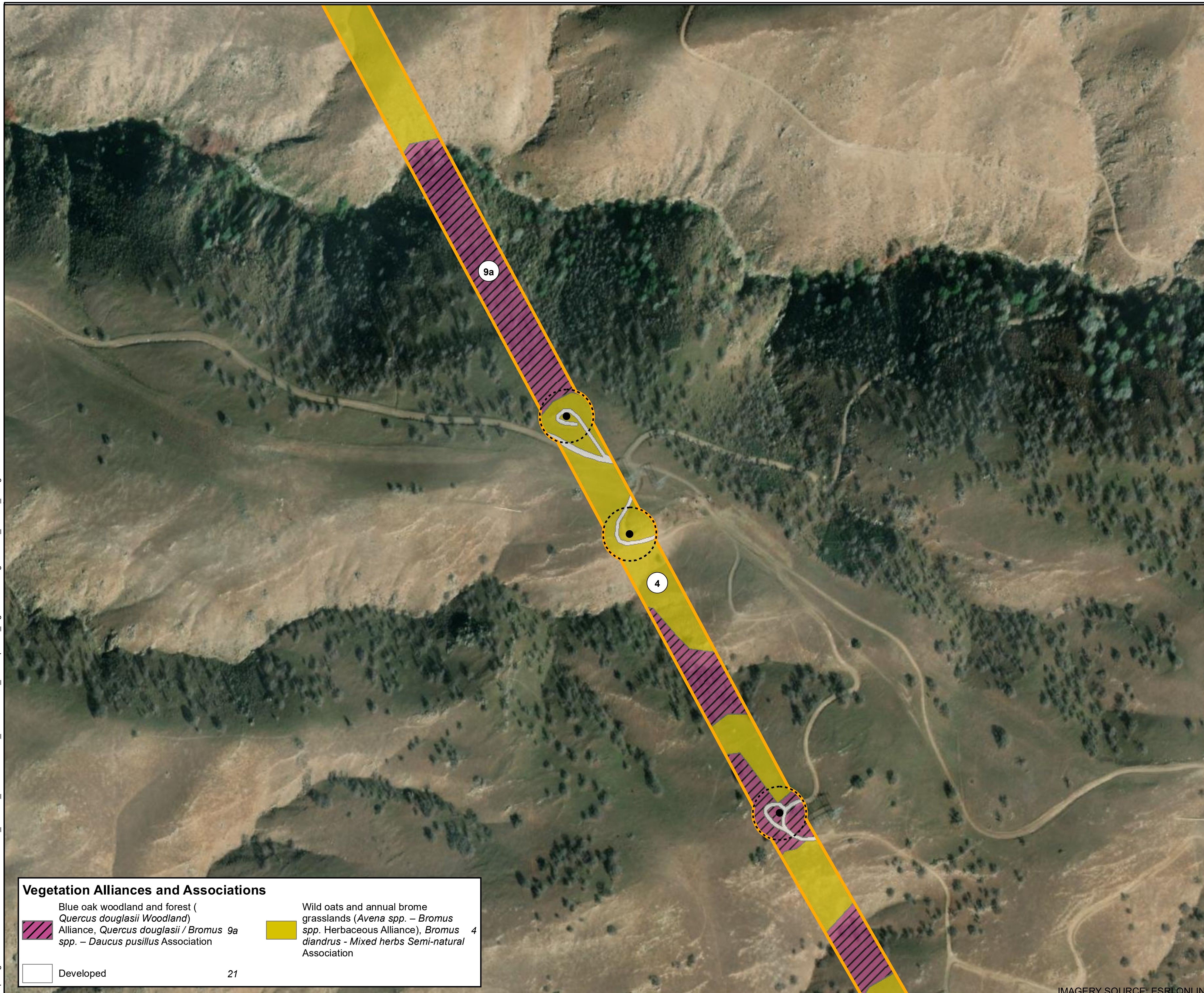

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet

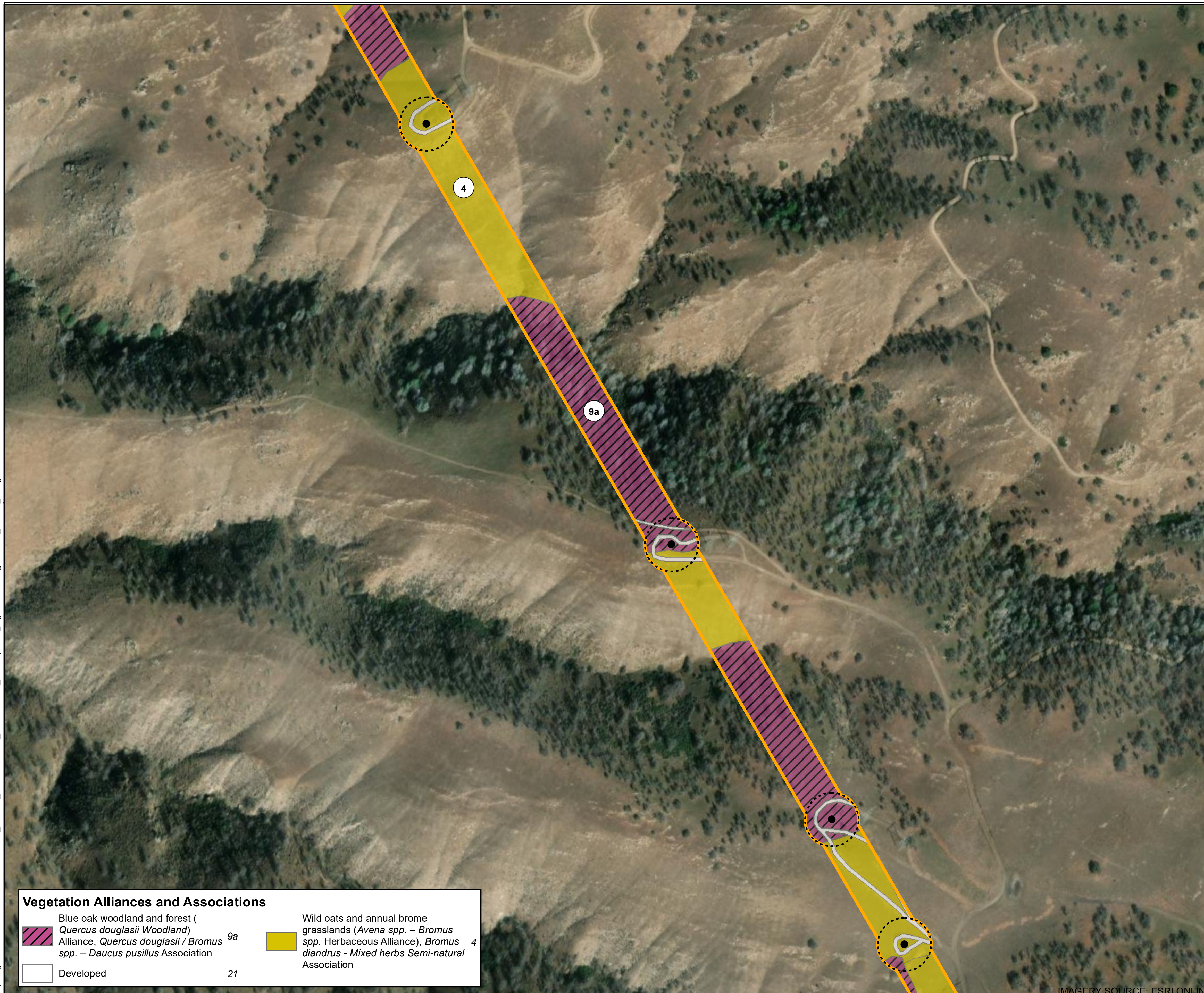

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\coparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An *EDISON INTERNATIONAL*® Company

N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

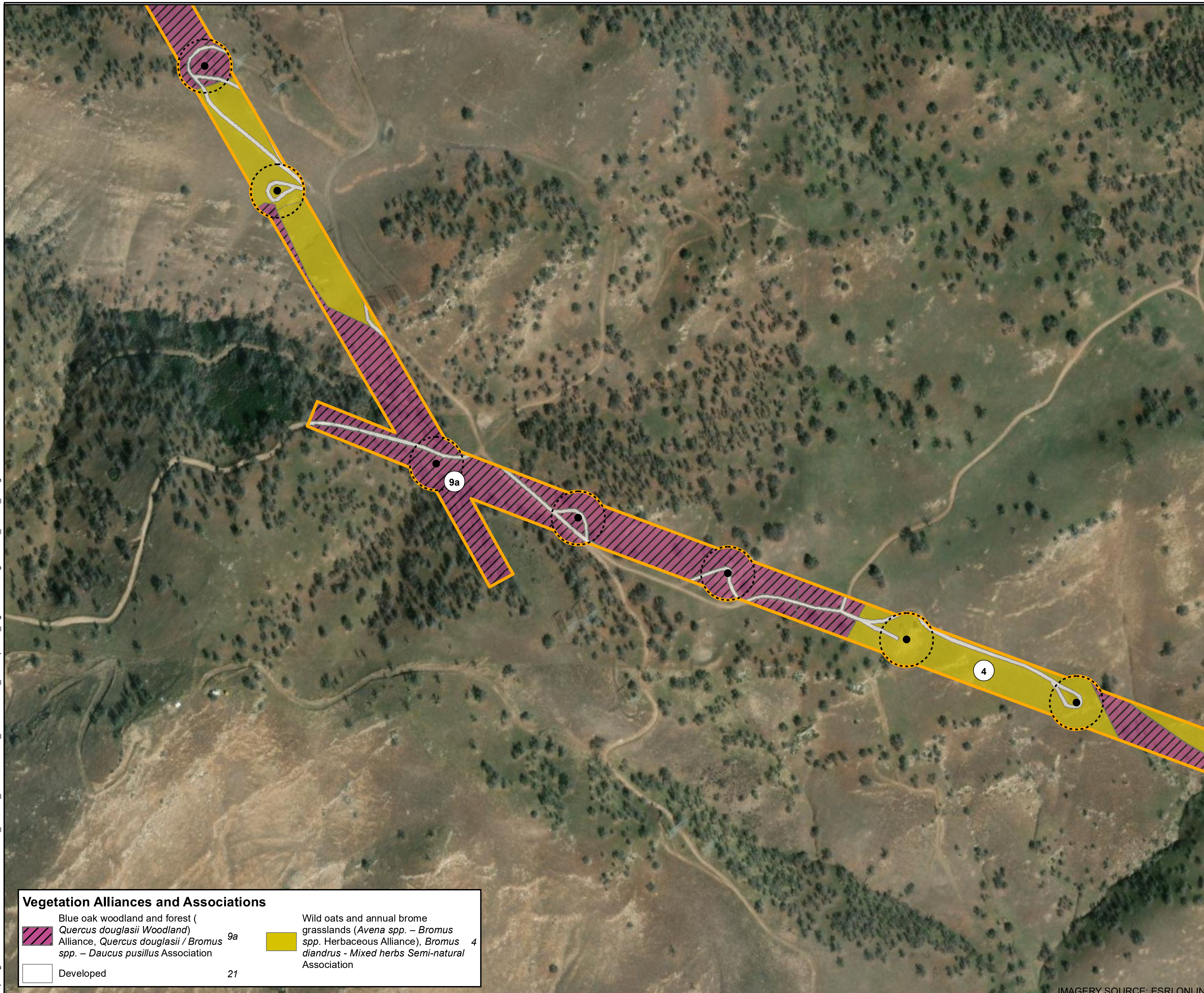
0 500 1,000
Feet


TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

**FIGURESET**
**5.4-1**




SOUTHERN CALIFORNIA EDISON
An *EDISON INTERNATIONAL*® Company

N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet


TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
**5.4-1**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022

SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

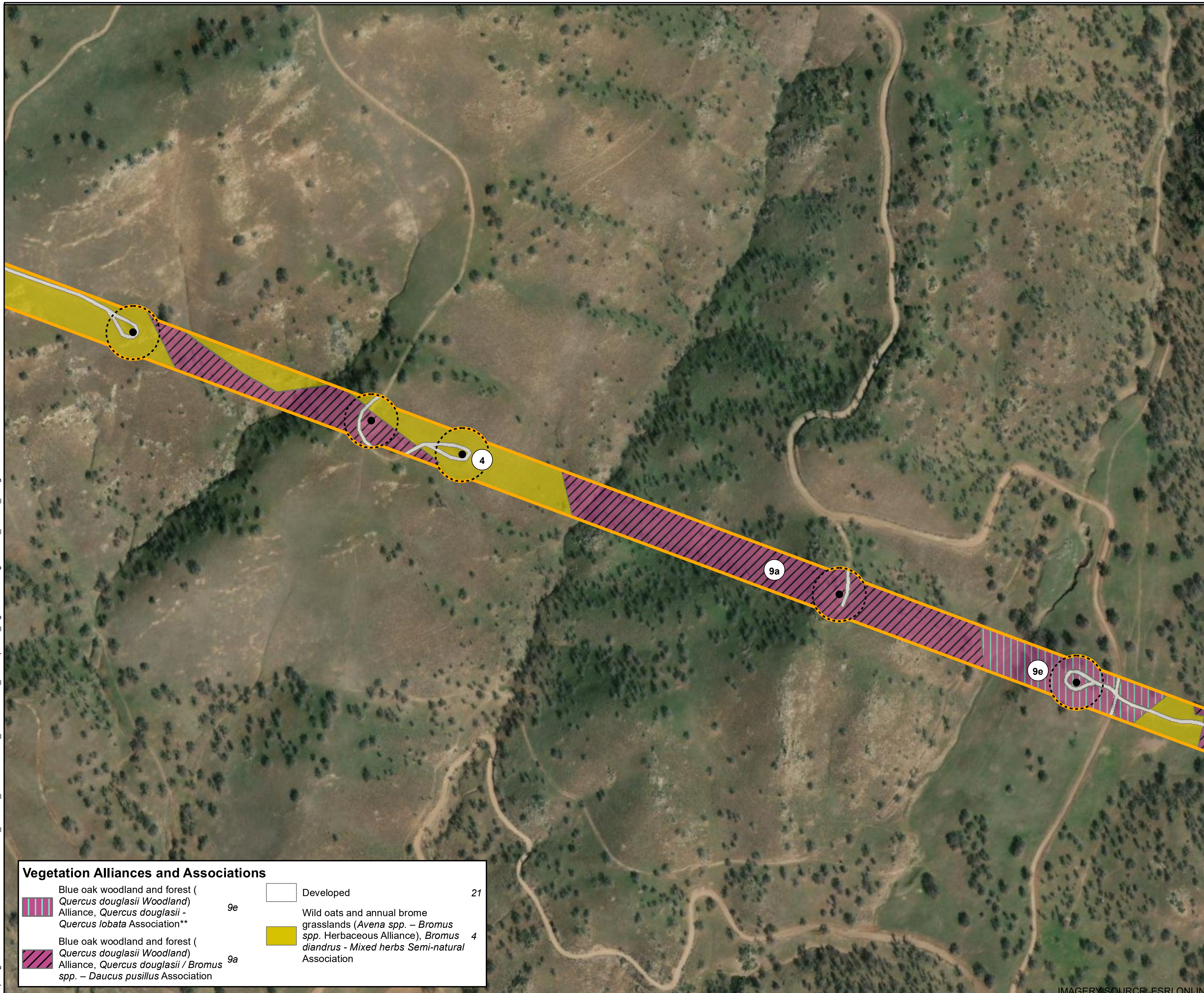
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

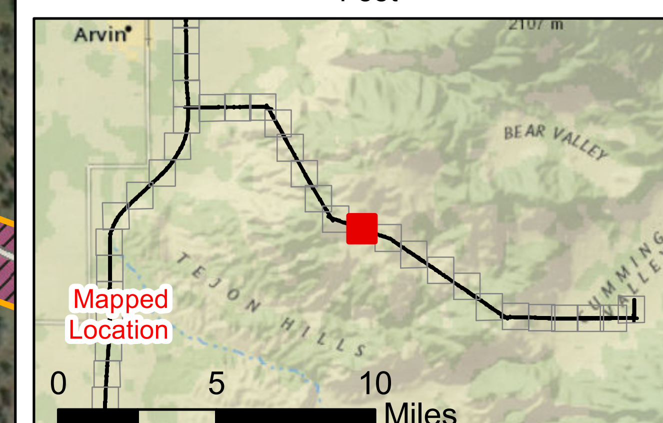
Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




**Vegetation Alliances and Associations**

| | | |
|---|---|---|
| Blue oak woodland and forest (*Quercus douglasii Woodland*) Alliance, *Quercus douglasii - Quercus lobata* Association** | | *9e* |
| Blue oak woodland and forest (*Quercus douglasii Woodland*) Alliance, *Quercus douglasii / Bromus* spp. *– Daucus pusillus* Association | | *9a* |
| Developed | | *21* |
| Wild oats and annual brome grasslands (*Avena spp. – Bromus* spp. Herbaceous Alliance), *Bromus diandrus - Mixed herbs Semi-natural* Association | | *4* |



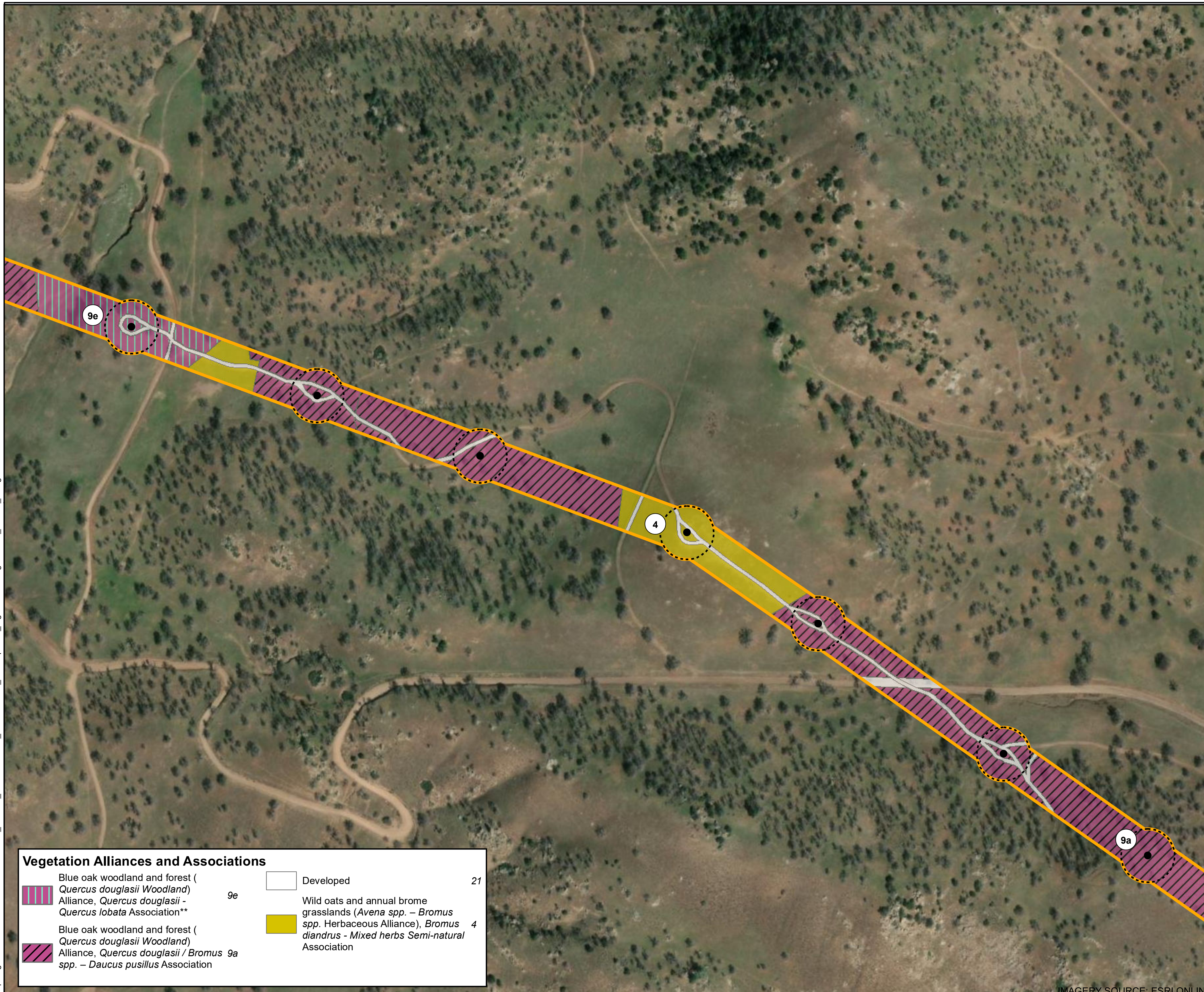

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

**FIGURESET**
**5.4-1**

\\coparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet

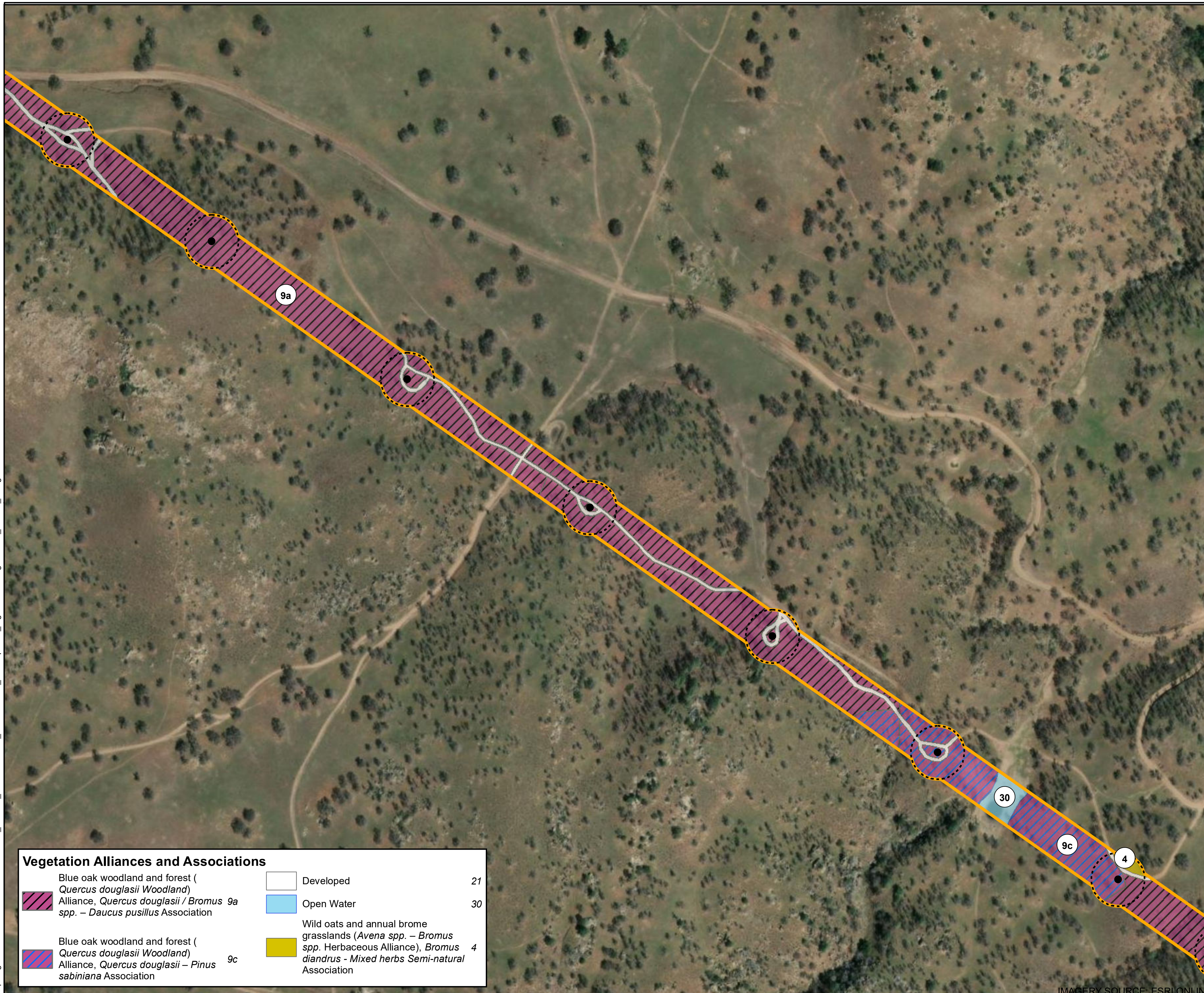
TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
**5.4-1**

\\coparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company

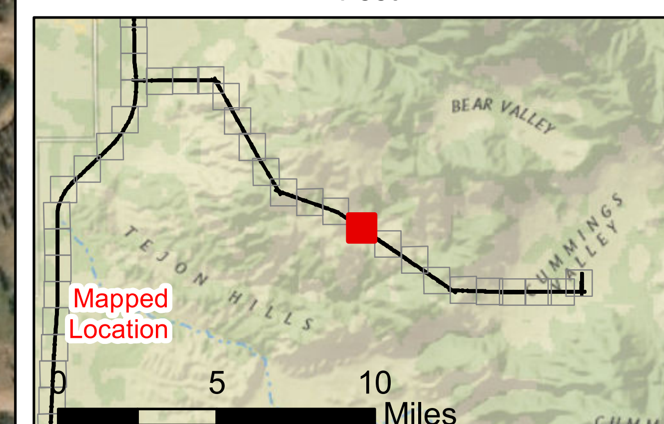
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

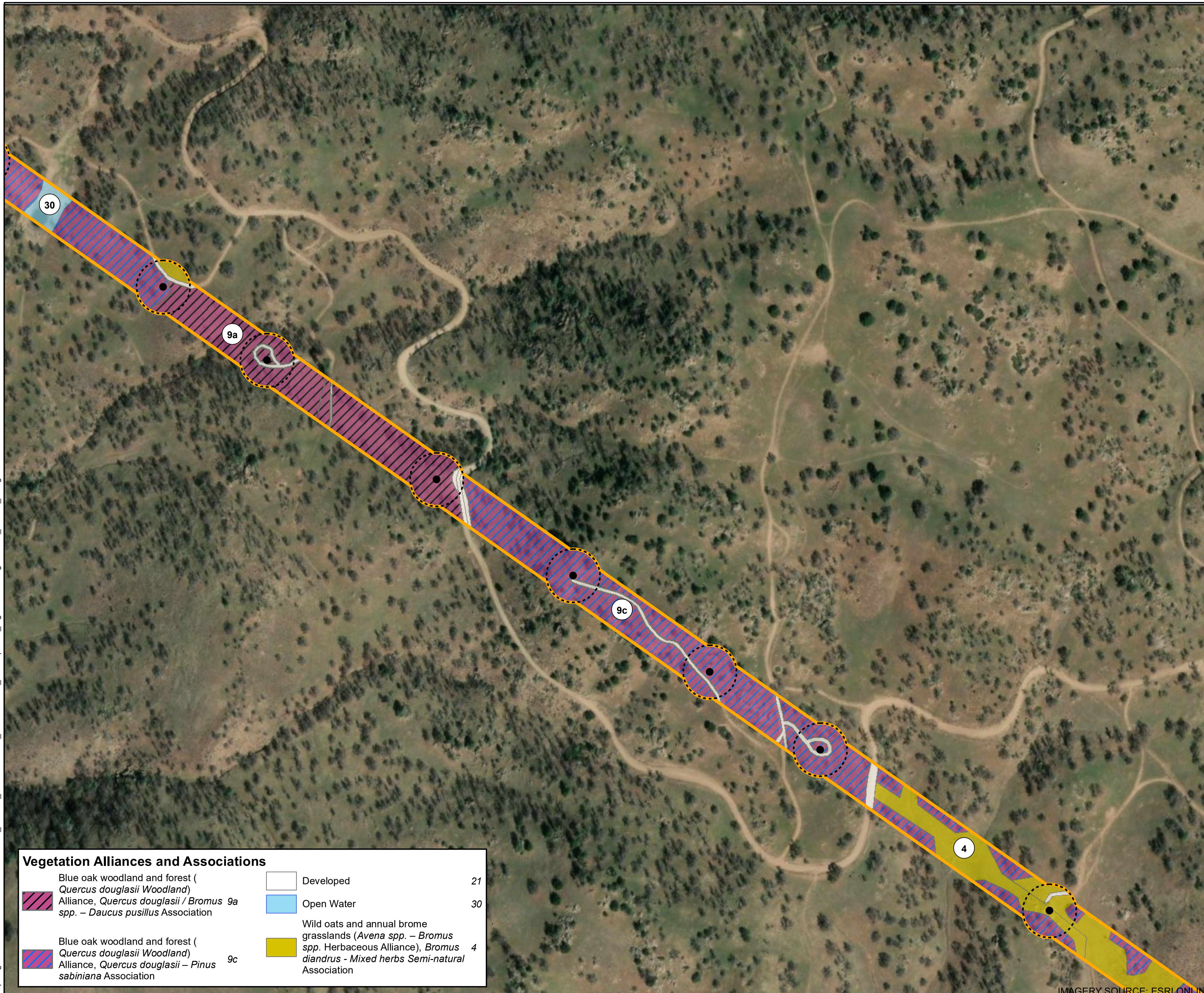
ARCADIS

FIGURESET
5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

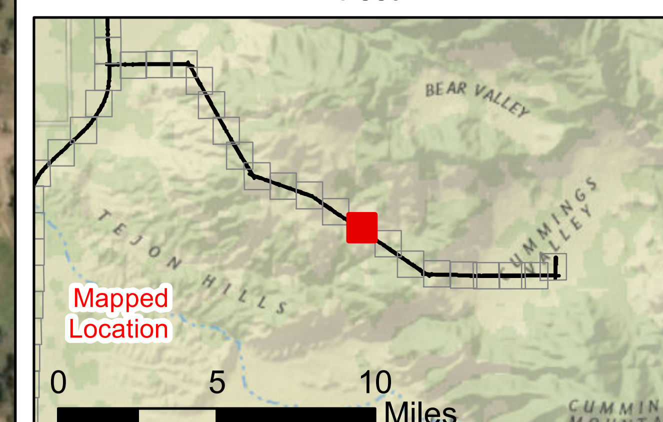



LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



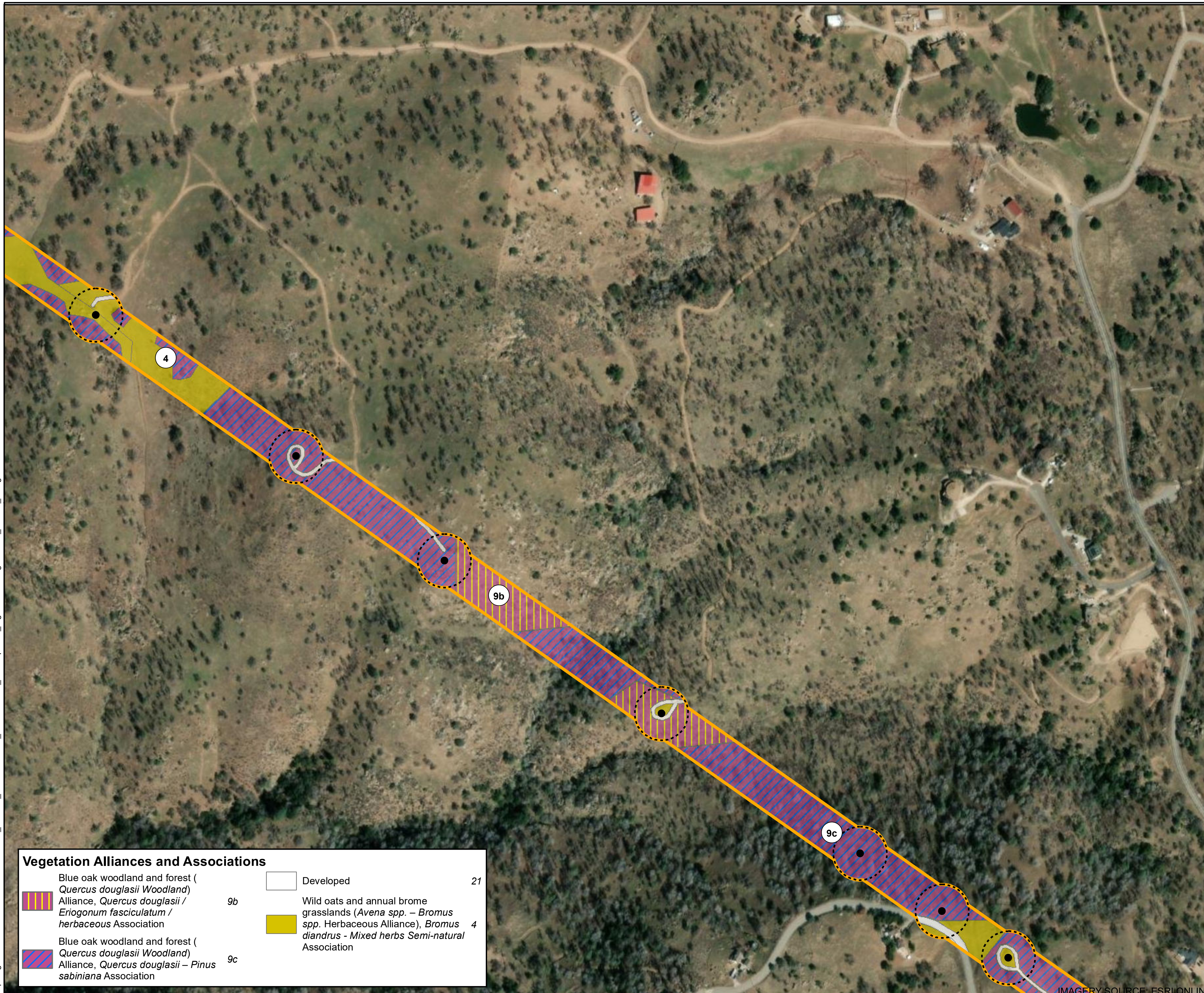

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

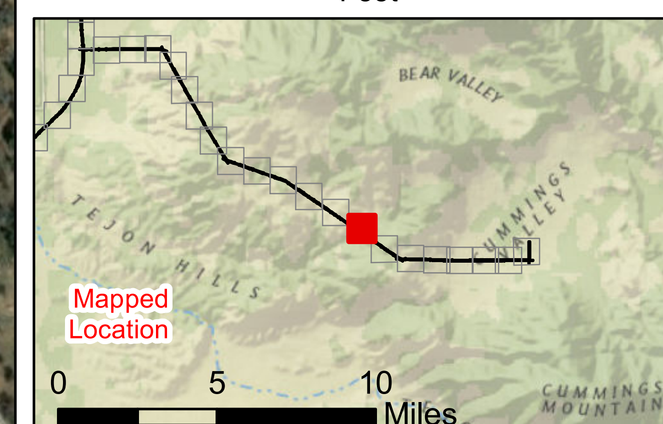
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



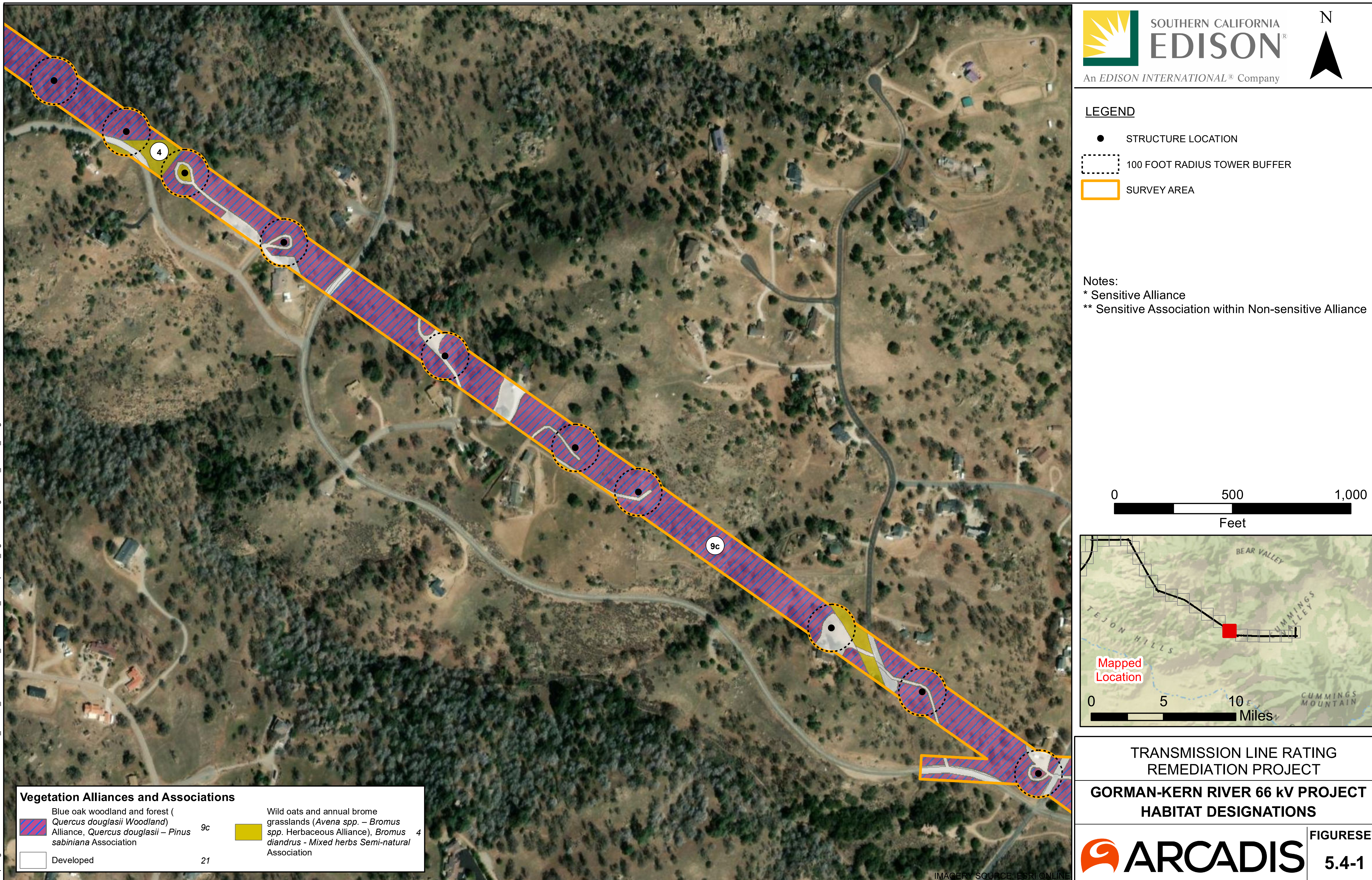

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

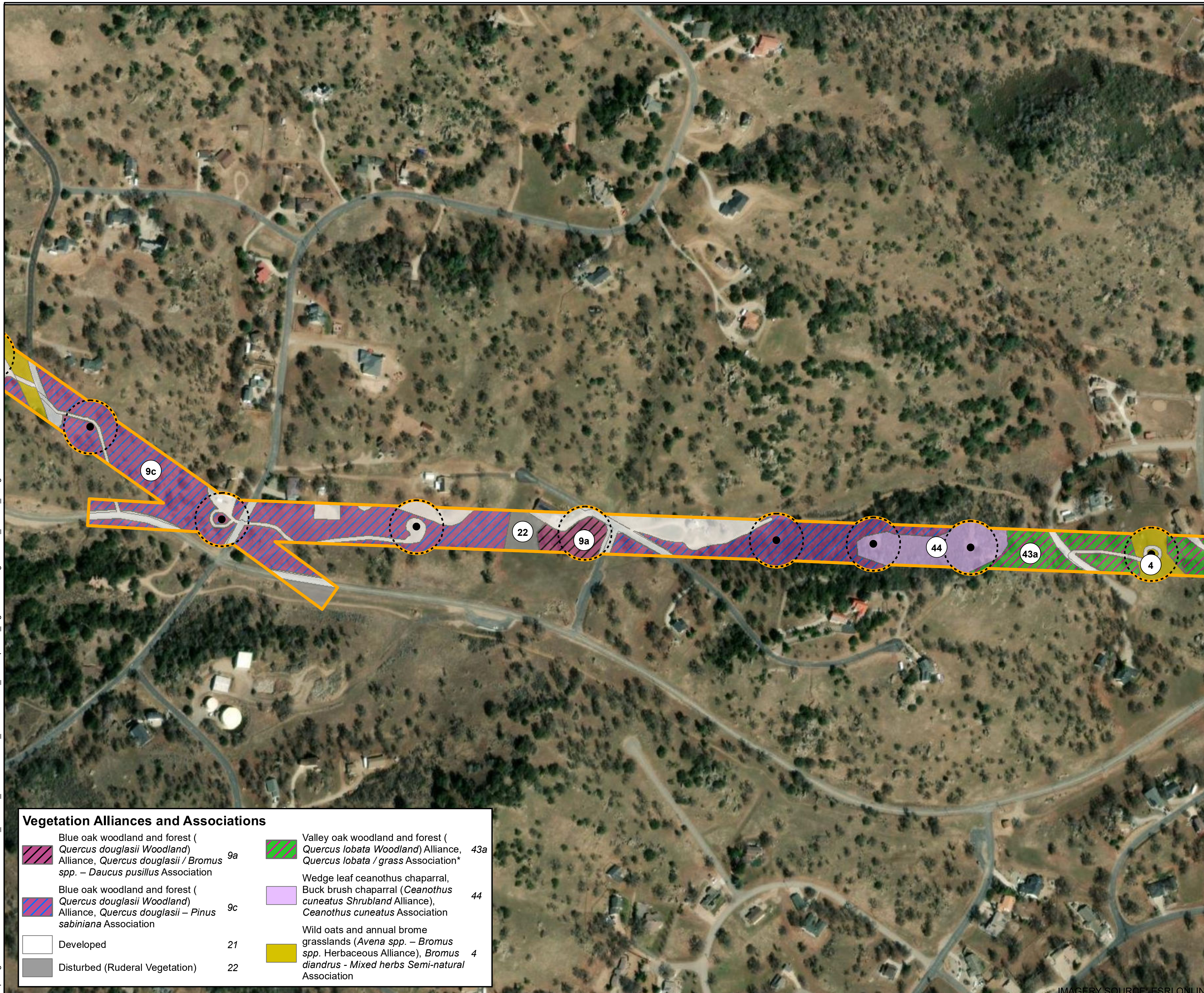
ARCADIS

FIGURESET
5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022



\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

N

LEGEND

STRUCTURE LOCATION

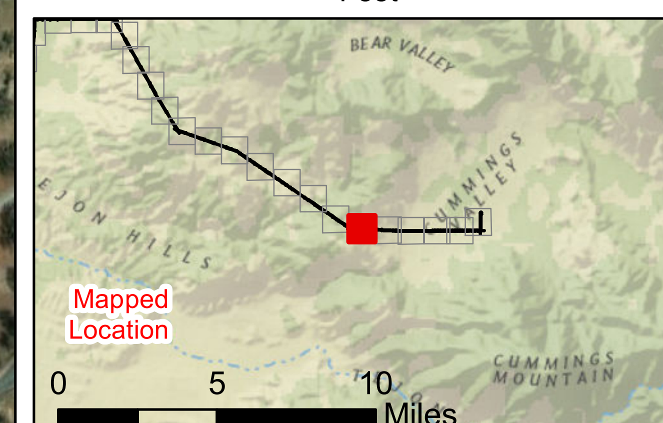
100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000

Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022

SOUTHERN CALIFORNIA EDISON

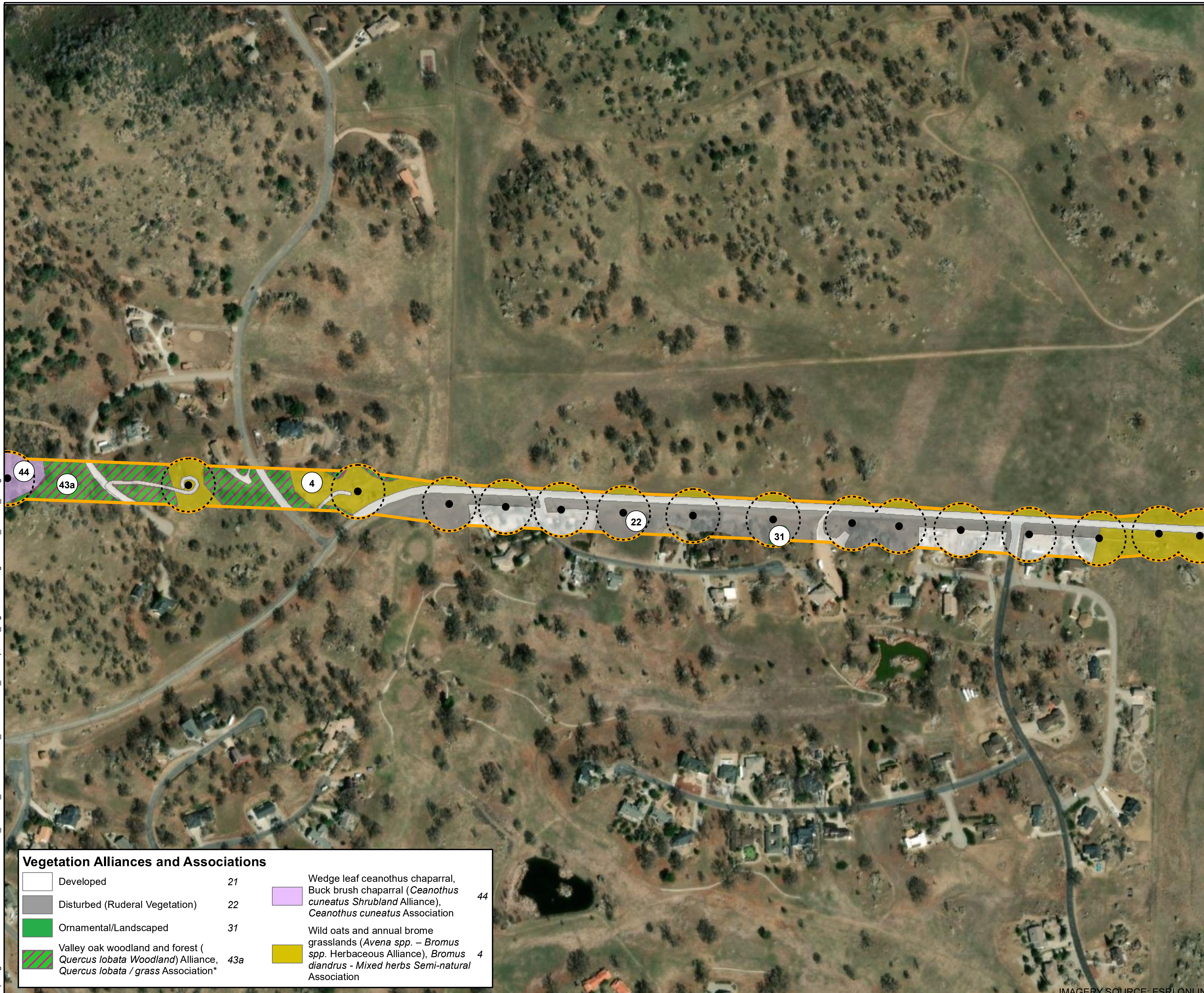
An EDISON INTERNATIONAL® Company

N

LEGEND

- ● STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

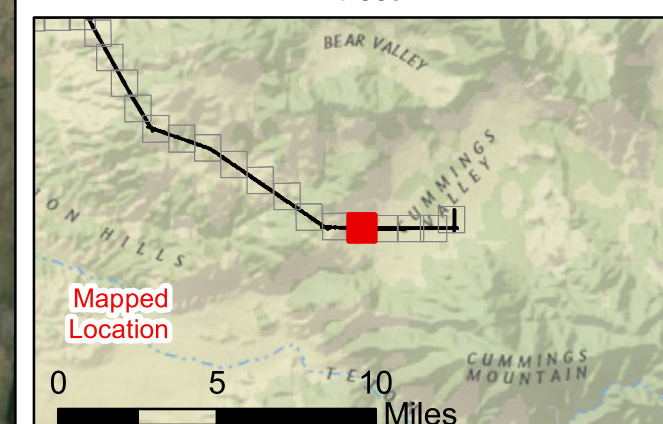
Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance




**Vegetation Alliances and Associations**

| | |
|---|---|
| Developed | 21 |
| Disturbed (Ruderal Vegetation) | 22 |
| Ornamental/Landscaped | 31 |
| Valley oak woodland and forest (*Quercus lobata Woodland*) Alliance, *Quercus lobata / grass* Association* | 43a |
| Wedge leaf ceanothus chaparral, Buck brush chaparral (*Ceanothus cuneatus Shrubland* Alliance), *Ceanothus cuneatus* Association | 44 |
| Wild oats and annual brome grasslands (*Avena spp. – Bromus spp.* Herbaceous Alliance), *Bromus diandrus - Mixed herbs Semi-natural* Association | 4 |

0 500 1,000
Feet



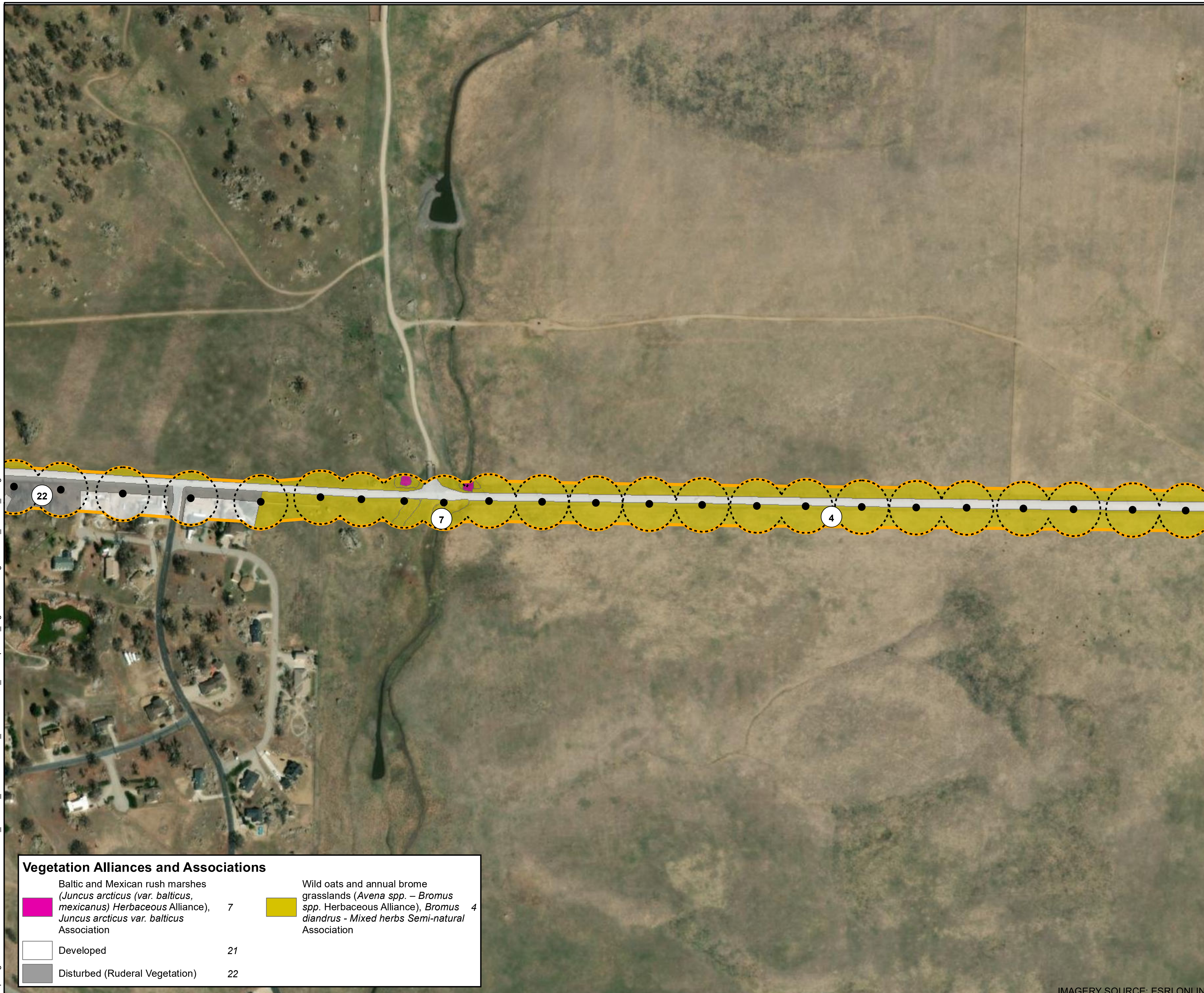

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

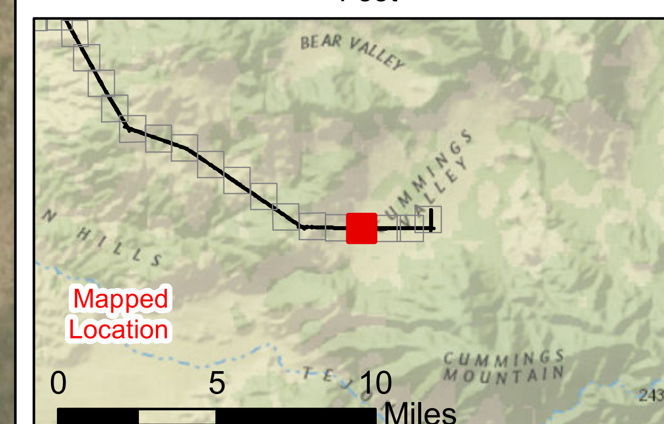
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



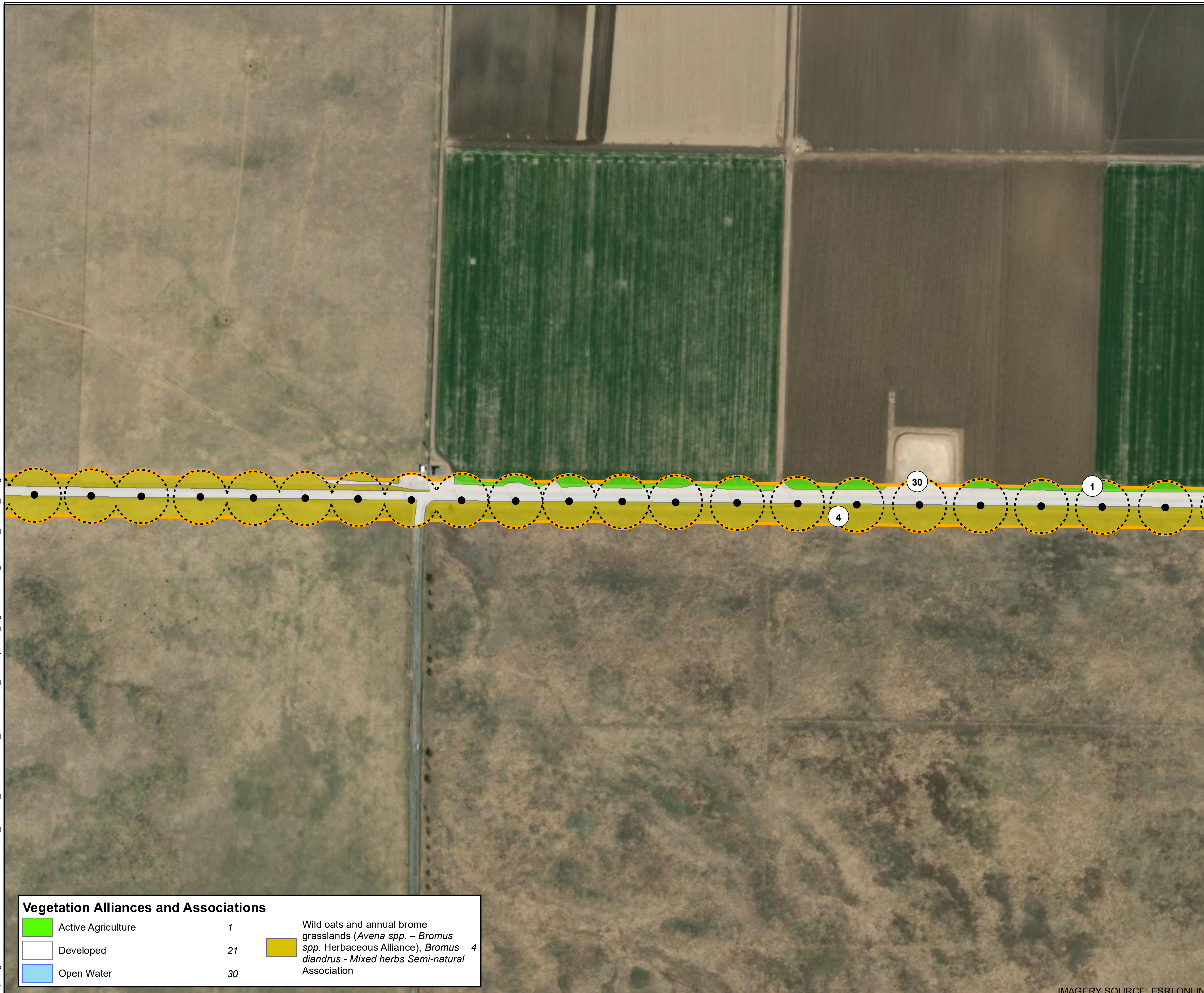

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

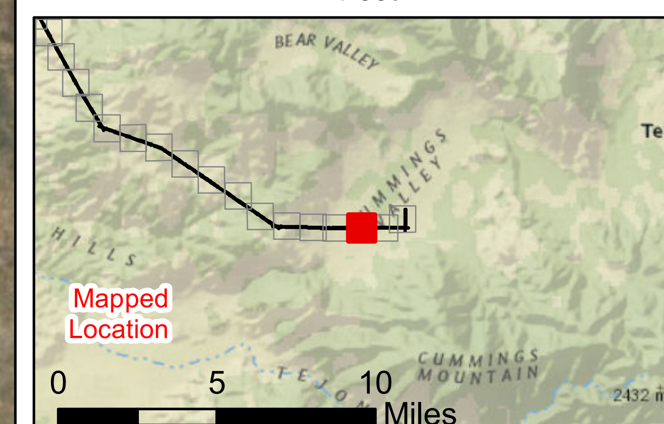
N

LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



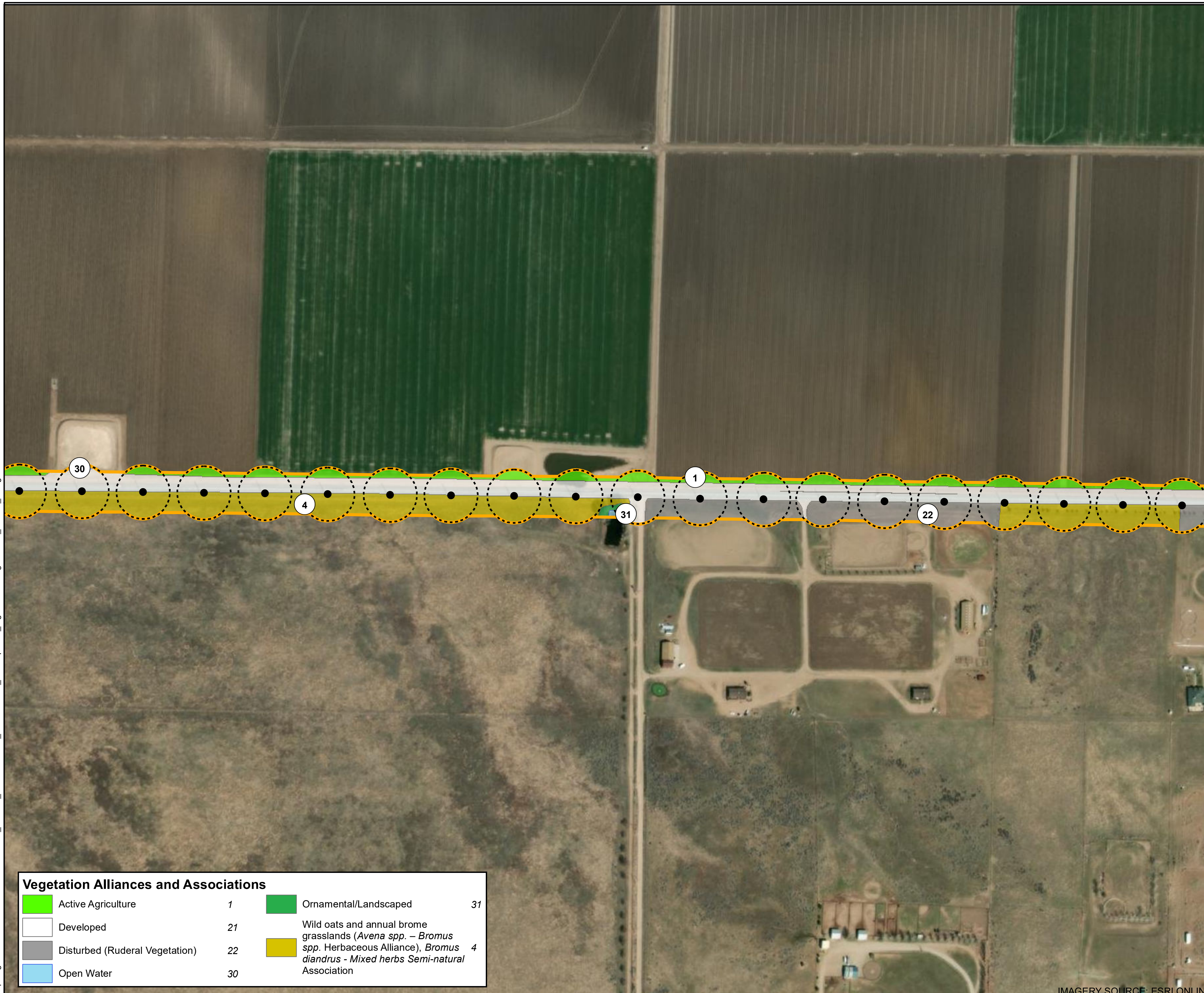

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

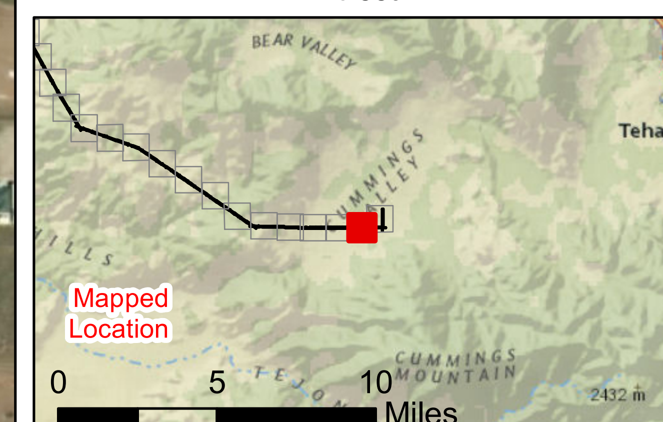
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet



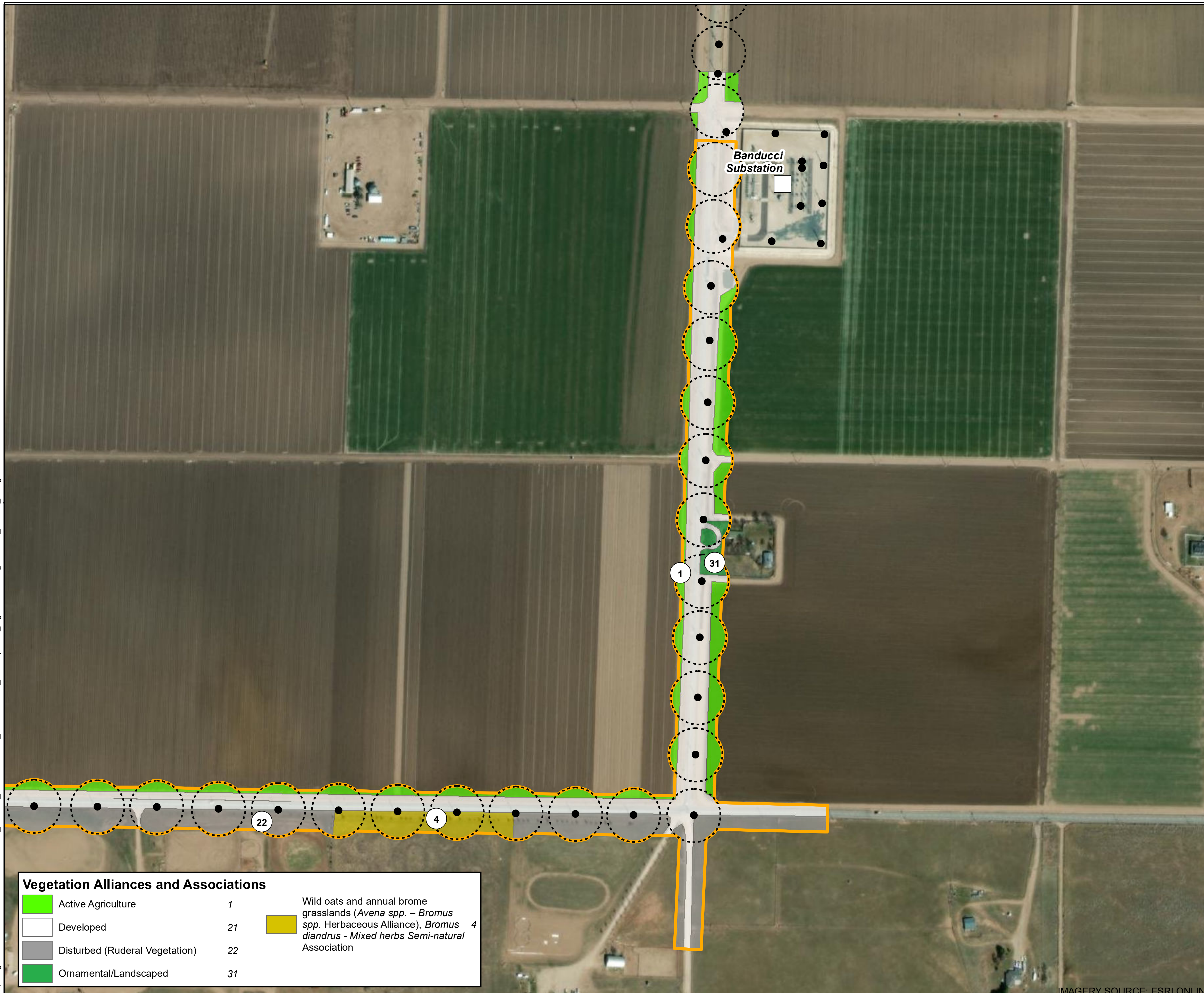

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**HABITAT DESIGNATIONS**

ARCADIS

FIGURESET
5.4-1

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

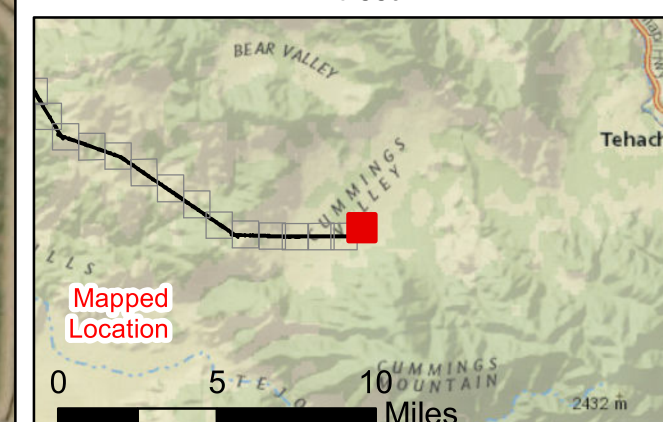
N

LEGEND

- STRUCTURE LOCATION
- SUBSTATION LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

Notes:
* Sensitive Alliance
** Sensitive Association within Non-sensitive Alliance

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT HABITAT DESIGNATIONS**

ARCADIS

FIGURESET 5.4-1

\\corpgis\Data\ArcGisData\GISPROJECTS_ENV T-L_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-1_Habitat_Designations.mxd 1/27/2022


SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company

N

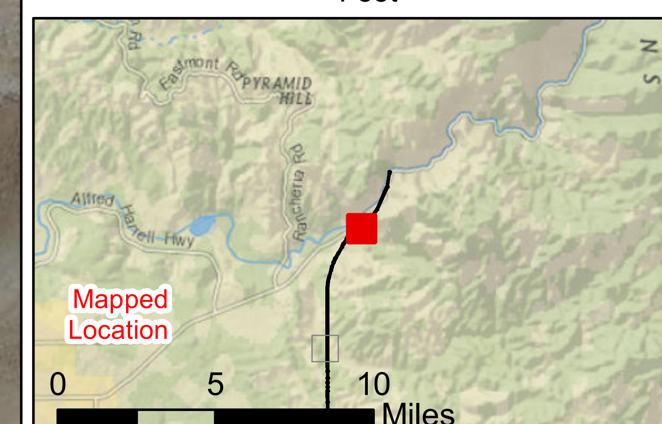
LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE PLANT LOCATIONS**

- KERN MALLOW *(EREMALCHE PARRYI SSP. KERNENSIS)*
- SAN JOAQUIN BLUECURLS *(TRICHOSTEMA OVATUM)*

0 500 1,000
Feet




TRANSMISSION LINE RATING
REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**SENSITIVE PLANTS**

ARCADIS

**FIGURESET**
**5.4-2**


SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE PLANT LOCATIONS**

- PIUTE MOUNTAINS NAVARRETIA *(NAVARRETIA SETILOBA)*

**SENSITIVE PLANT AREAS**

- SAN JOAQUIN BLUECURLS *(TRICHOSTEMA OVATUM)*

0 500 1,000
Feet


TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**SENSITIVE PLANTS**

ARCADIS

**FIGURESET**
**5.4-2**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-2_Sensitive_Plants.mxd 1/27/2022

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company

N


LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

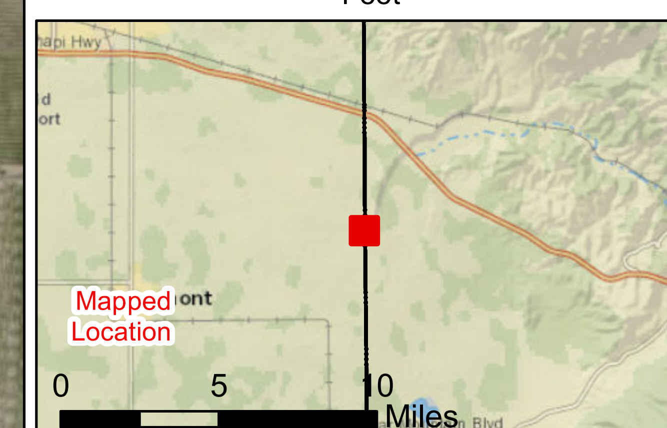
**SENSITIVE PLANT LOCATIONS**

- BAKERSFIELD CACTUS *(OPUNTIA BASILARIS VAR. TRELEASEI)*

**SENSITIVE PLANT AREAS**

- BAKERSFIELD CACTUS *(OPUNTIA BASILARIS VAR. TRELEASEI)*

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE PLANTS**

ARCADIS

**FIGURESET**

**5.4-2**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-2_Sensitive_Plants.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

N

LEGEND

STRUCTURE LOCATION

ACCESS ROADS

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

**SENSITIVE PLANT LOCATIONS**

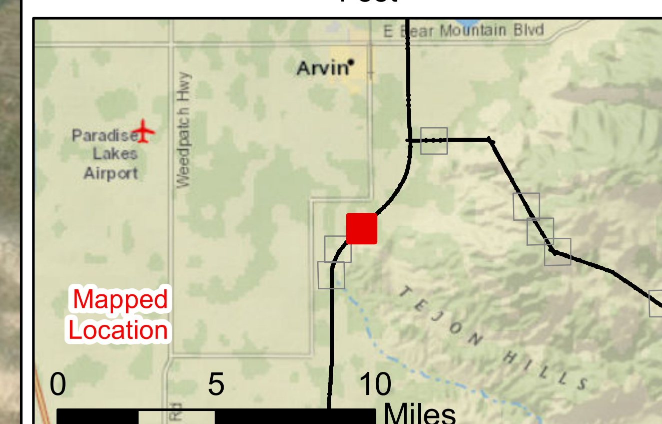
SAN JOAQUIN BLUECURLS *(TRICHOSTEMA OVATUM)*

**SENSITIVE PLANT AREAS**

SAN JOAQUIN BLUECURLS *(TRICHOSTEMA OVATUM)*

0 500 1,000

Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE PLANTS**

ARCADIS

**FIGURESET**

**5.4-2**


SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE PLANT LOCATIONS**

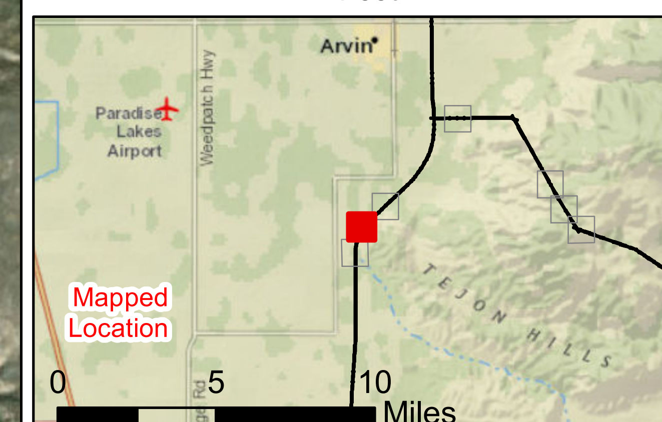
- SAN JOAQUIN BLUECURLS *(TRICHOSTEMA OVATUM)*

**SENSITIVE PLANT AREAS**

- SAN JOAQUIN BLUECURLS *(TRICHOSTEMA OVATUM)*

0 500 1,000

Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE PLANTS**

ARCADIS

**FIGURESET**

**5.4-2**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-2_Sensitive_Plants.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

N

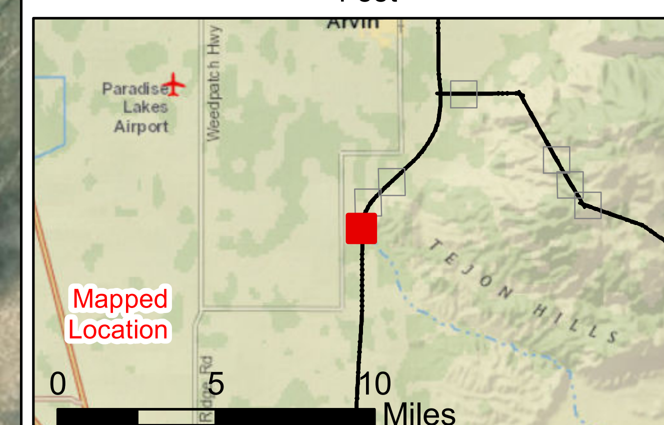
LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE PLANT AREAS**

- SAN JOAQUIN BLUECURLS *(TRICHOSTEMA OVATUM)*

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE PLANTS**

ARCADIS

**FIGURESET**

**5.4-2**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-2_Sensitive_Plants.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

N

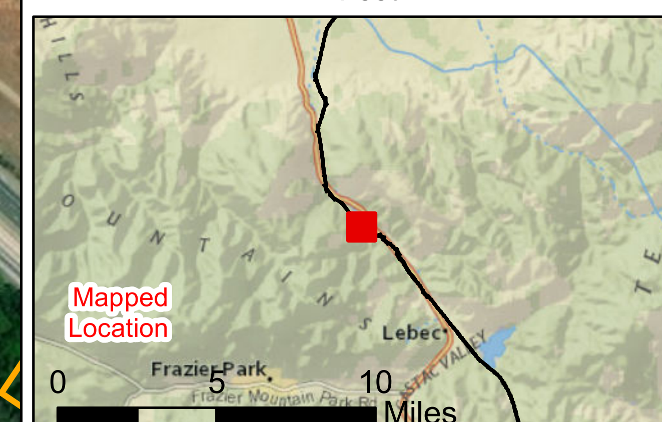
LEGEND

STRUCTURE LOCATION
ACCESS ROADS
100 FOOT RADIUS TOWER BUFFER
SURVEY AREA

SENSITIVE PLANT LOCATIONS

PIUTE MOUNTAINS NAVARRETIA
*(NAVARRETIA SETILOBA)*

0 500 1,000
Feet




TRANSMISSION LINE RATING
REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**SENSITIVE PLANTS**

ARCADIS

FIGURESET
**5.4-2**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-2_Sensitive_Plants.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

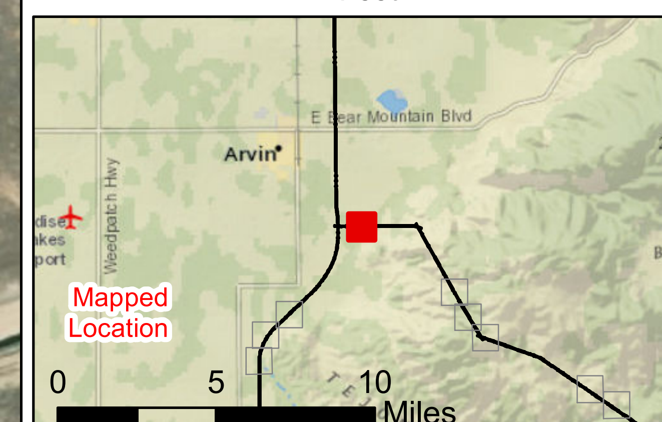
LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE PLANT LOCATIONS**

- KERN MALLOW *(EREMALCHE PARRYI SSP. KERNENSIS)*

0 500 1,000
Feet



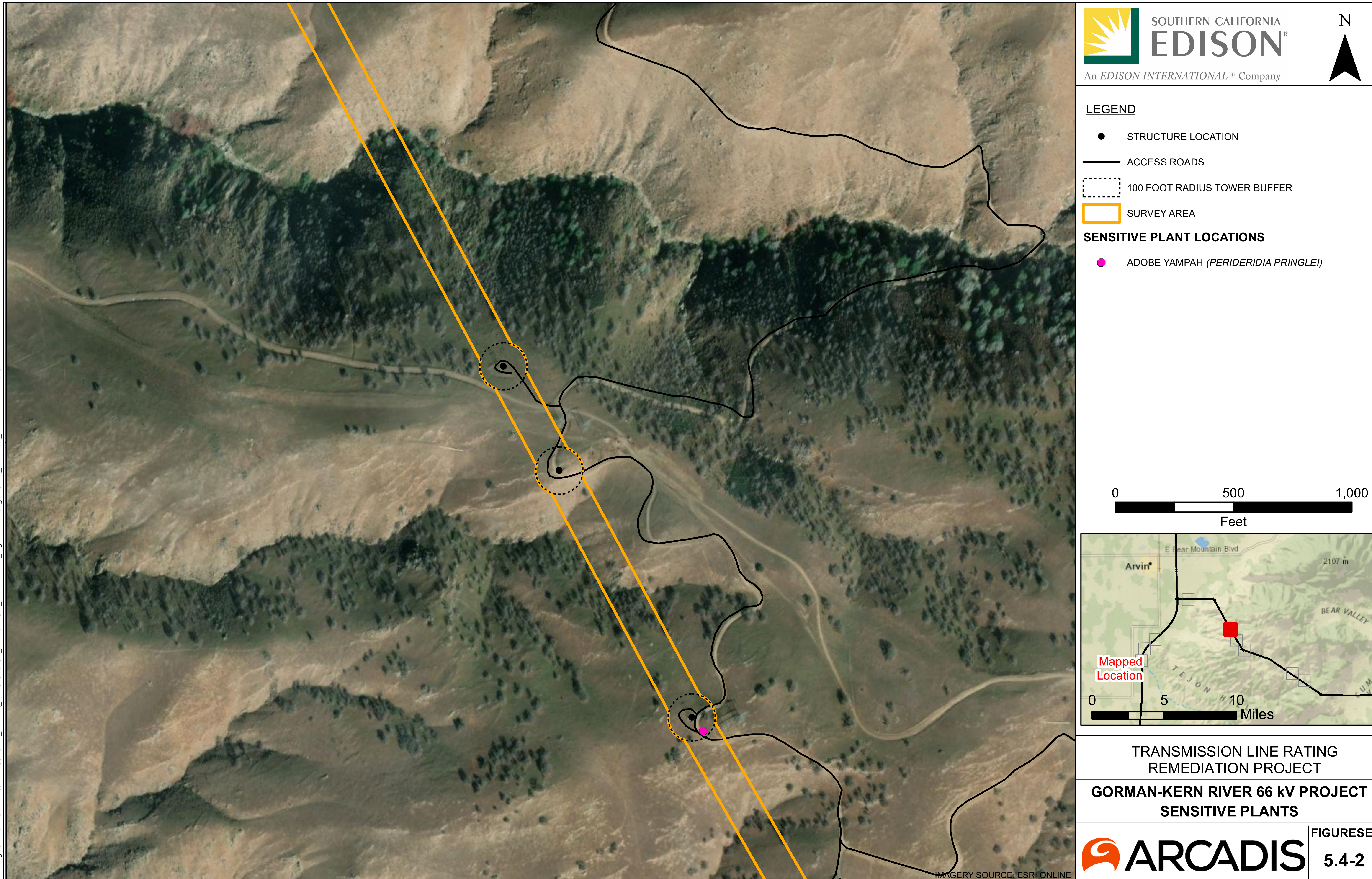

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE PLANTS**

ARCADIS

**FIGURESET**
**5.4-2**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-2_Sensitive_Plants.mxd 1/27/2022




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE PLANTS**

ARCADIS

FIGURESET 5.4-2


SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE PLANT LOCATIONS**

- ADOBE YAMPAH *(PERIDERIDIA PRINGLEI)*
- PIUTE MOUNTAINS NAVARRETIA *(NAVARRETIA SETILOBA)*

**SENSITIVE PLANT AREAS**

- PIUTE MOUNTAINS NAVARRETIA *(NAVARRETIA SETILOBA)*

0 500 1,000
Feet


TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**SENSITIVE PLANTS**

ARCADIS

**FIGURESET**
**5.4-2**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-2_Sensitive_Plants.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

STRUCTURE LOCATION
ACCESS ROADS
100 FOOT RADIUS TOWER BUFFER
SURVEY AREA

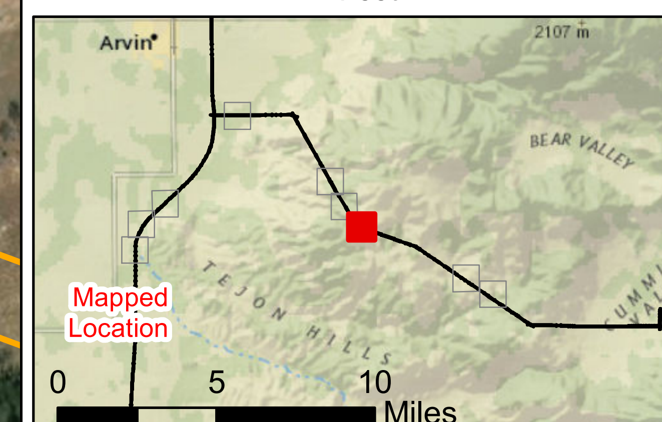
**SENSITIVE PLANT LOCATIONS**

PIUTE MOUNTAINS NAVARRETIA
*(NAVARRETIA SETILOBA)*

**SENSITIVE PLANT AREAS**

PIUTE MOUNTAINS NAVARRETIA
*(NAVARRETIA SETILOBA)*

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE PLANTS**

ARCADIS

**FIGURESET**
**5.4-2**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-2_Sensitive_Plants.mxd 1/27/2022


SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company

N

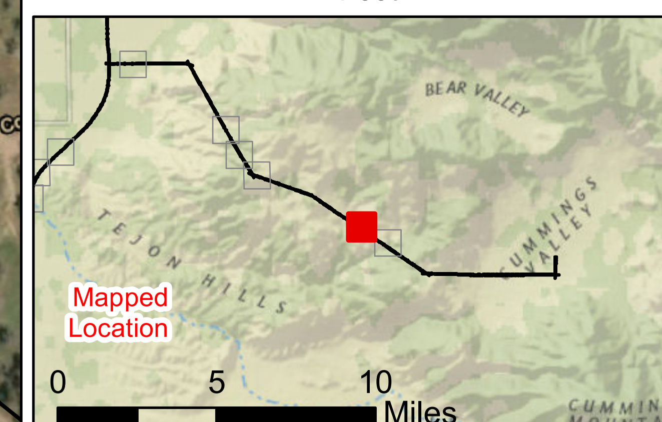
LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE PLANT LOCATIONS**

- CALICO MONKEYFLOWER *(MIMULUS PICTUS)*

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE PLANTS**

ARCADIS

**FIGURESET**
**5.4-2**

\\corparcgis\Data\ArcGis\Data\GISPROJECTS_ENV T-_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-2_Sensitive_Plants.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

N

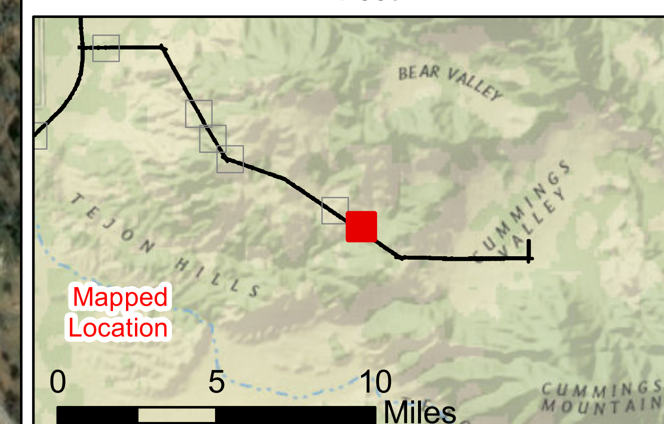
LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE PLANT LOCATIONS**

- ADOBE YAMPAH *(PERIDERIDIA PRINGLEI)*
- CALICO MONKEYFLOWER *(MIMULUS PICTUS)*

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE PLANTS**

ARCADIS

**FIGURESET 5.4-2**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-2_Sensitive_Plants.mxd 1/27/2022

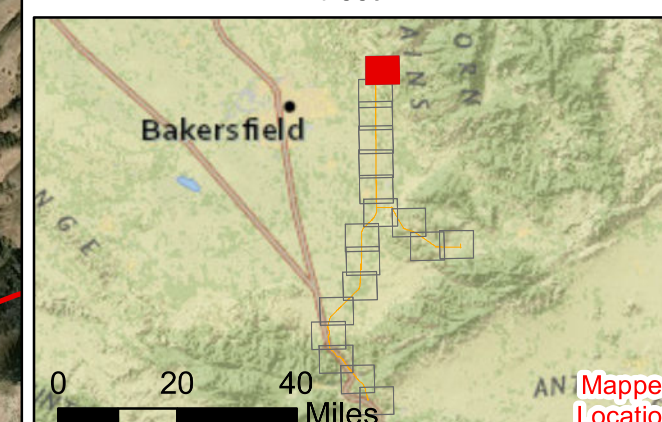

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- SUBSTATION LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000
Feet



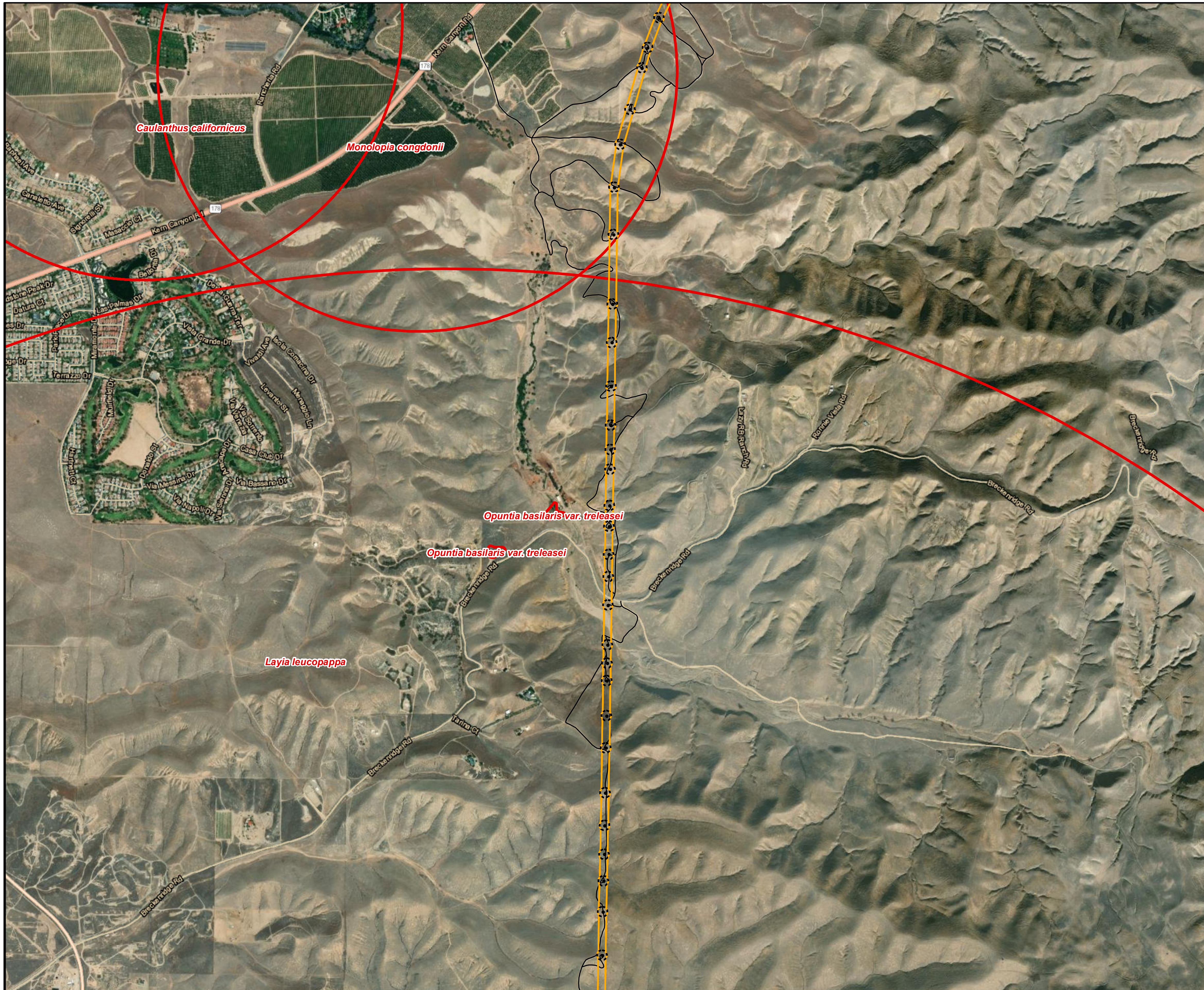

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT CNDDB PLANTS**

ARCADIS

FIGURESET
5.4-3

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-3_CNDDB_Plants.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

TRANSMISSION LINE RATING REMEDIATION PROJECT

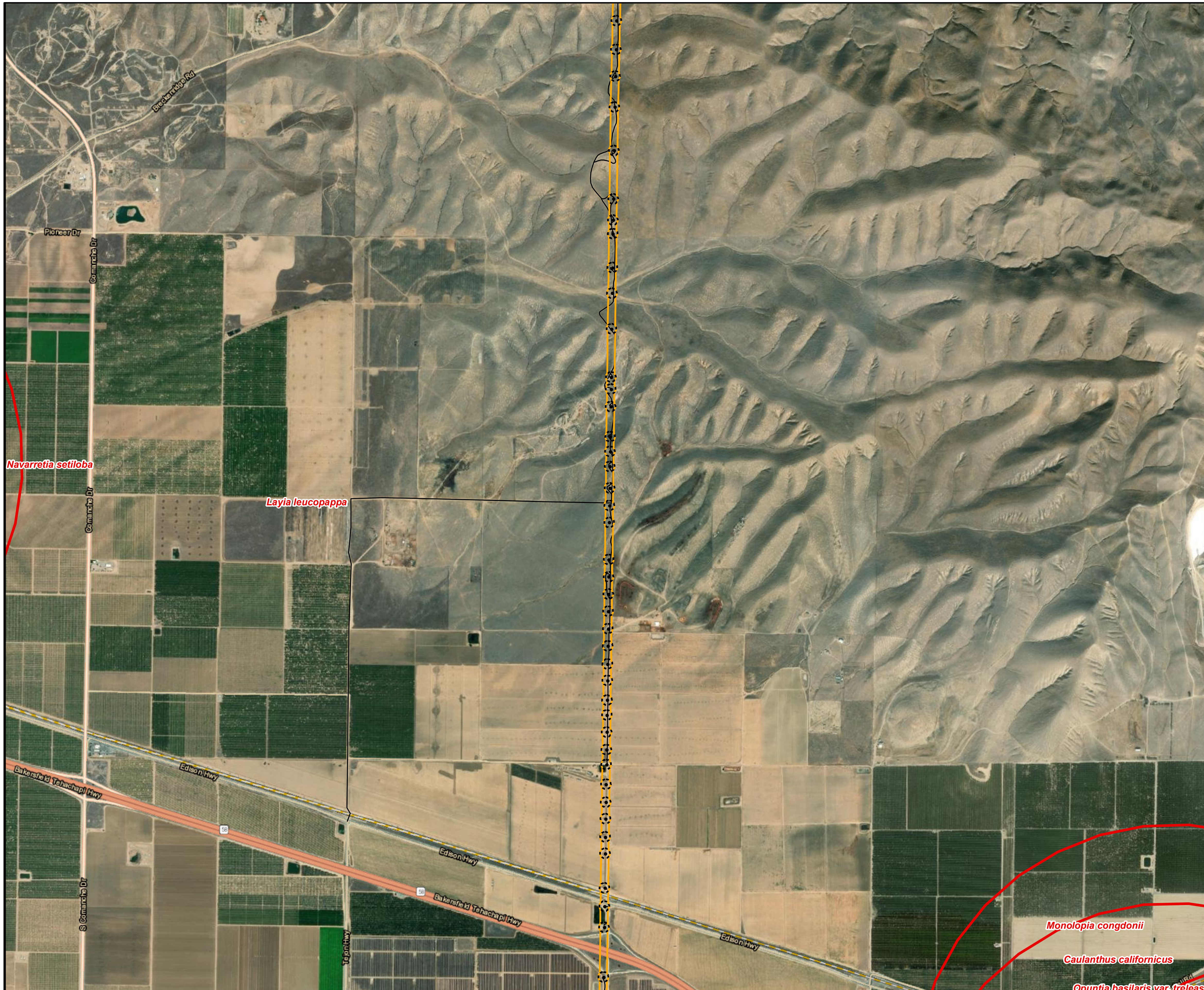
**GORMAN-KERN RIVER 66 kV PROJECT CNDDB PLANTS**

ARCADIS

FIGURESET

**5.4-3**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-3_CNDDB_Plants.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

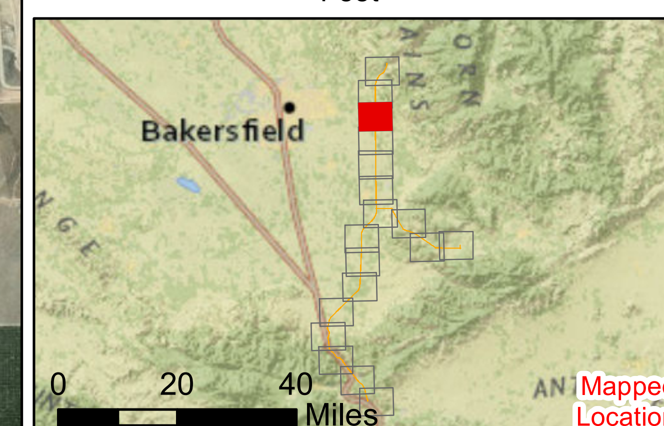
N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000

Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

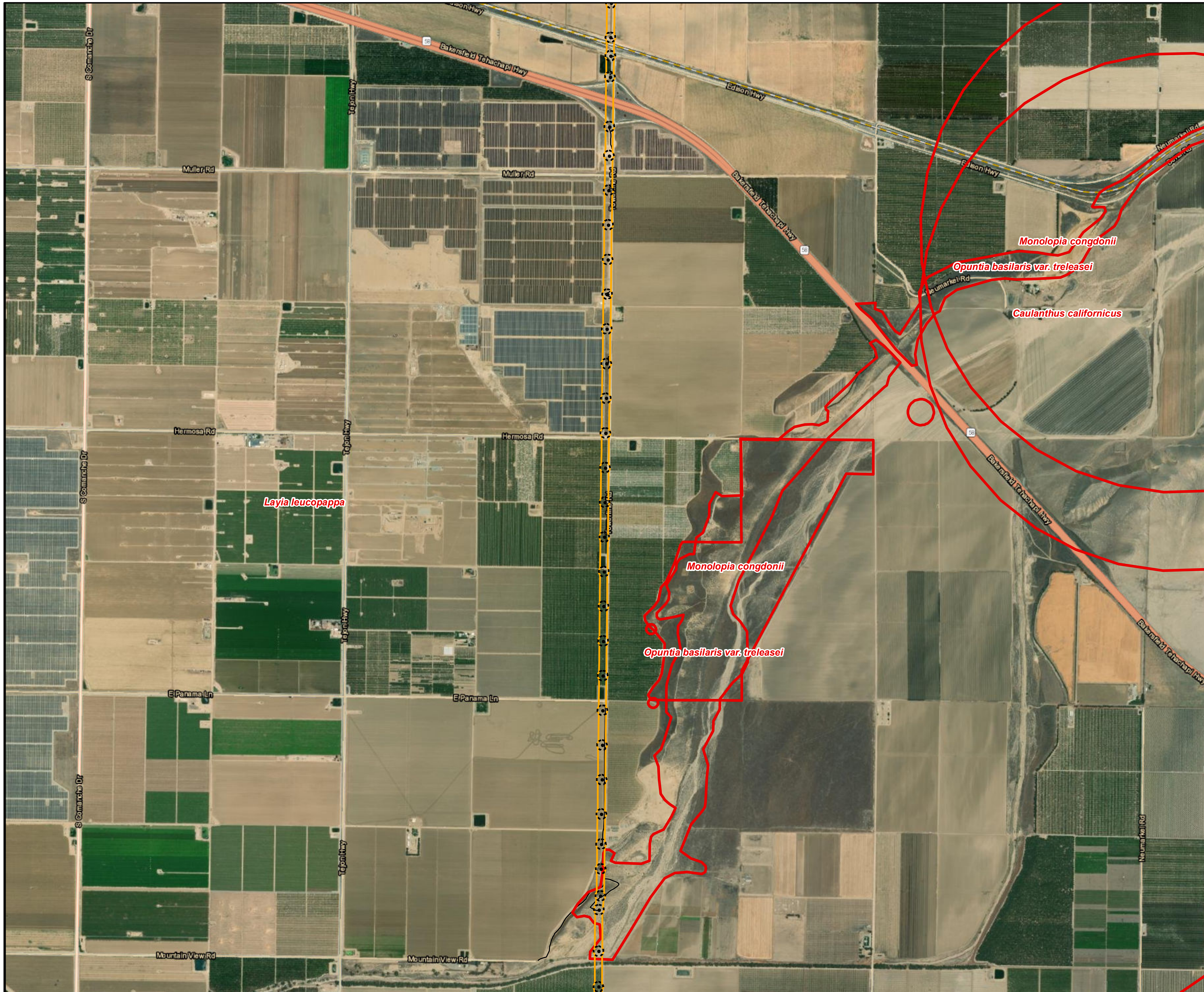
**GORMAN-KERN RIVER 66 kV PROJECT**
**CNDDB PLANTS**

ARCADIS

FIGURESET

5.4-3

\\corpcargis\Data\ArcGis\Data\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-3_CNDDB_Plants.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000
Feet

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT CNDDB PLANTS**

ARCADIS

FIGURESET
5.4-3

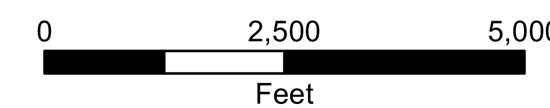
\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-3_CNDDB_Plants.mxd 1/27/2022

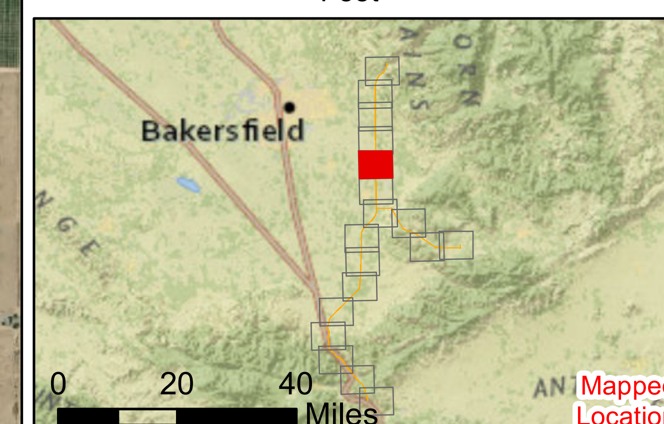

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES



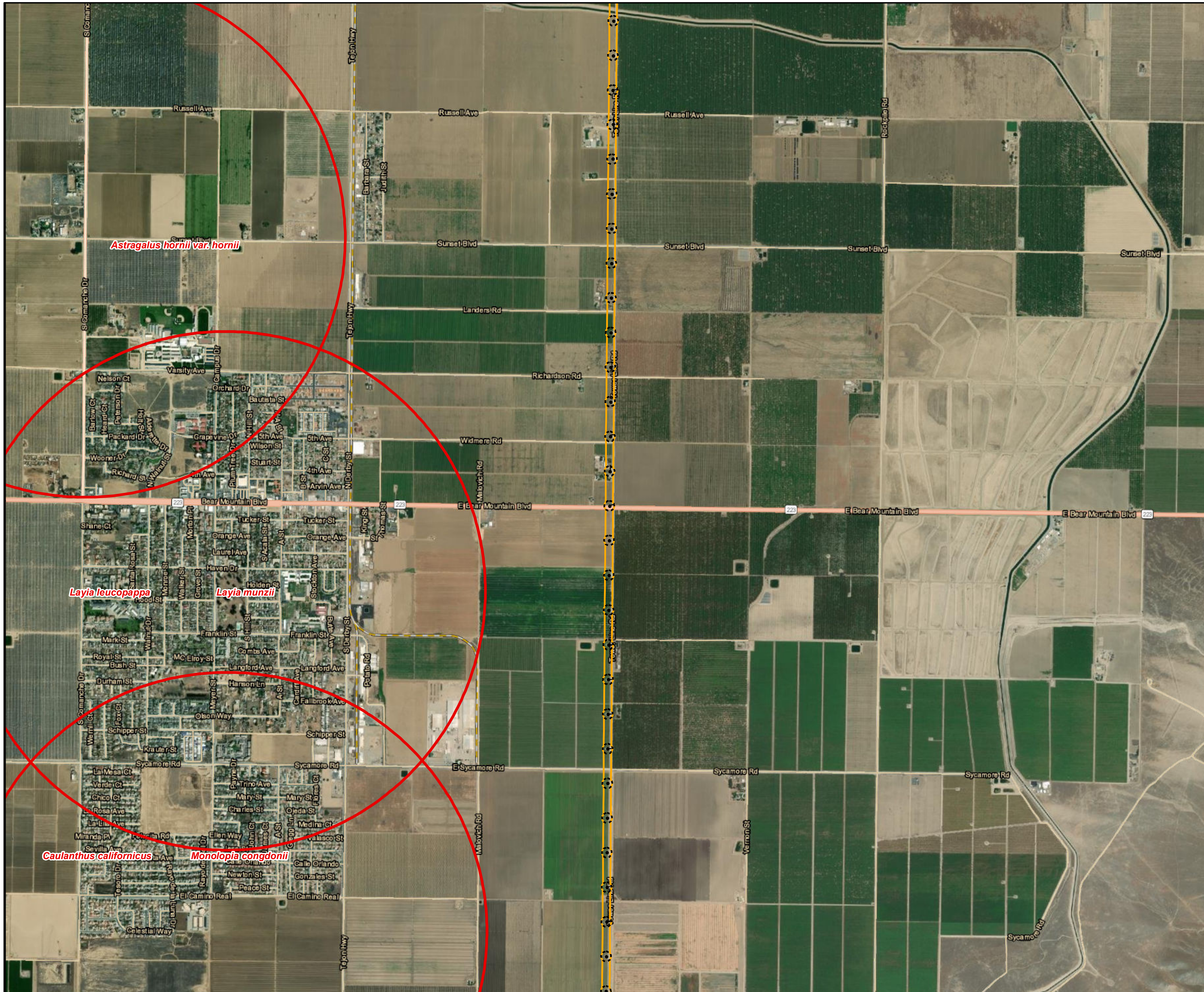

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT CNDDB PLANTS**

ARCADIS

FIGURESET 5.4-3

\\corpargis\Data\ArcGisData\GIS\PROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-3_CNDDB_Plants.mxd 1/27/2022



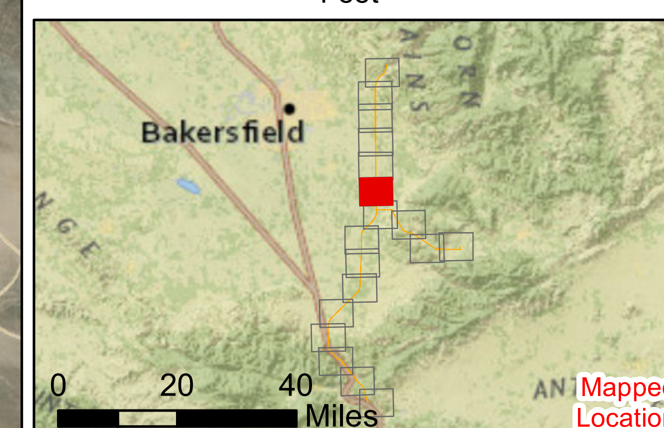

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000
Feet



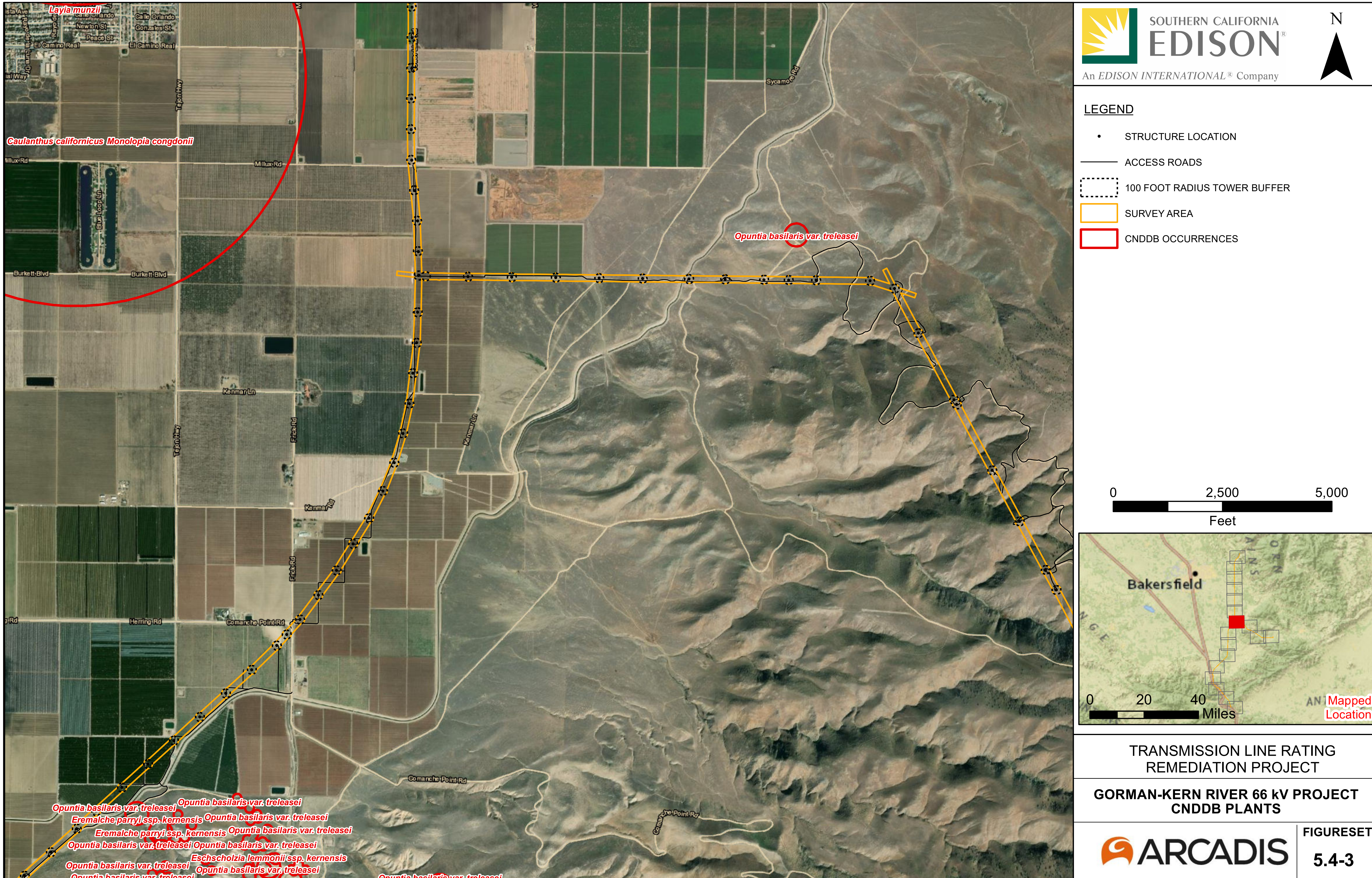

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT CNDDB PLANTS**

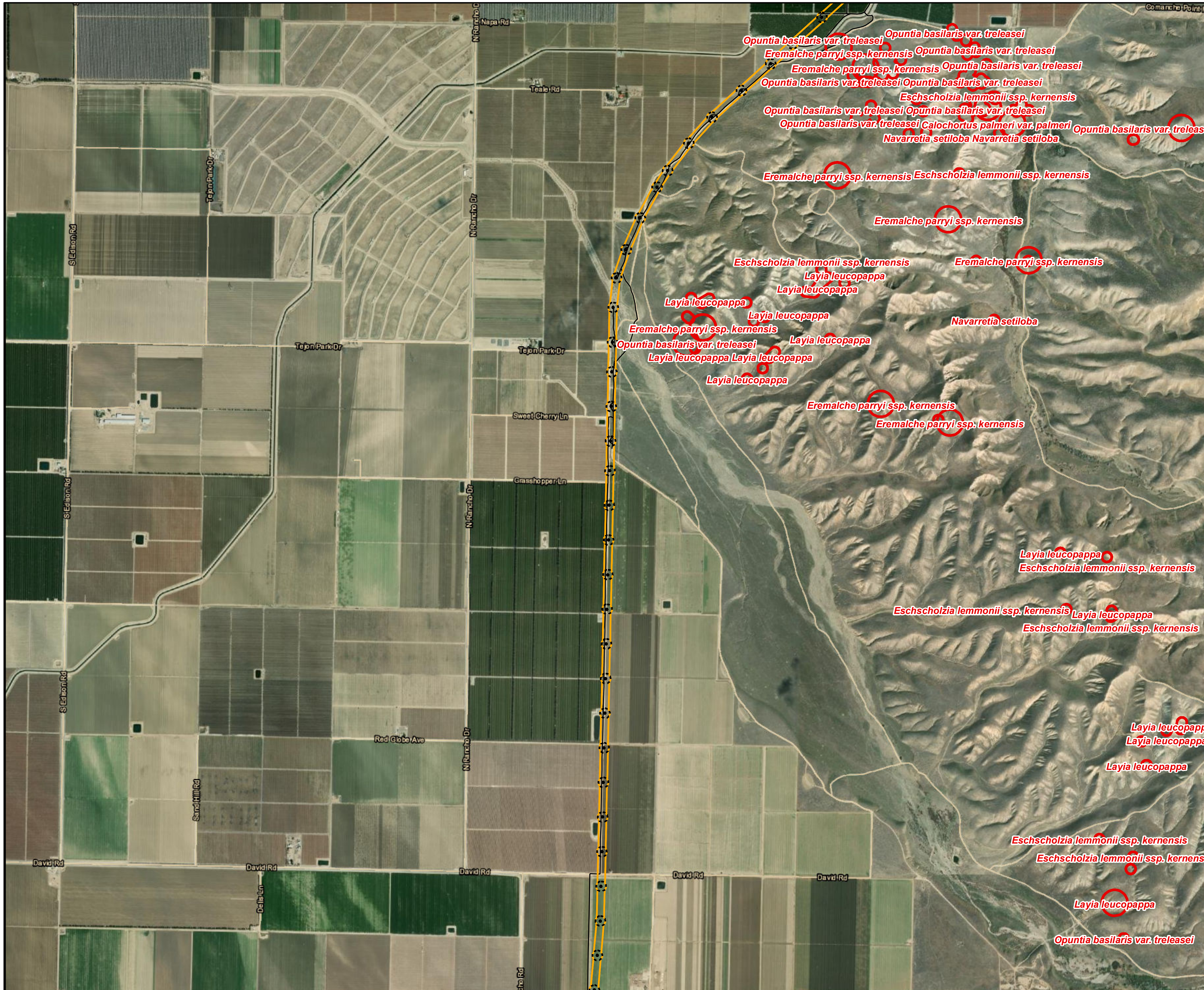
ARCADIS

FIGURESET
**5.4-3**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-3_CNDDB_Plants.mxd 1/27/2022



SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company
N
LEGEND
STRUCTURE LOCATION
ACCESS ROADS
100 FOOT RADIUS TOWER BUFFER
SURVEY AREA
CNDDB OCCURRENCES
0 2,500 5,000
Feet
Bakersfield
0 20 40
Miles
Mapped Location
Layia munzii
Caulanthus californicus Monolopia congdonii
Opuntia basilaris var. treleasei
Eremalche parryi ssp. kernensis
Eschscholzia lemmonii ssp. kernensis
Millux Rd
Burkett Blvd
Kenmar Ln
Herring Rd
Comanche Point Rd
Sycamore Rd
Tejon Hwy
Frick Rd
TRANSMISSION LINE RATING REMEDIATION PROJECT
GORMAN-KERN RIVER 66 kV PROJECT
CNDDB PLANTS
ARCADIS
FIGURESET
5.4-3
\\corpargis\Data\ArcGis\Data\GIS\PROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-3_CNDDB_Plants.mxd 1/27/2022



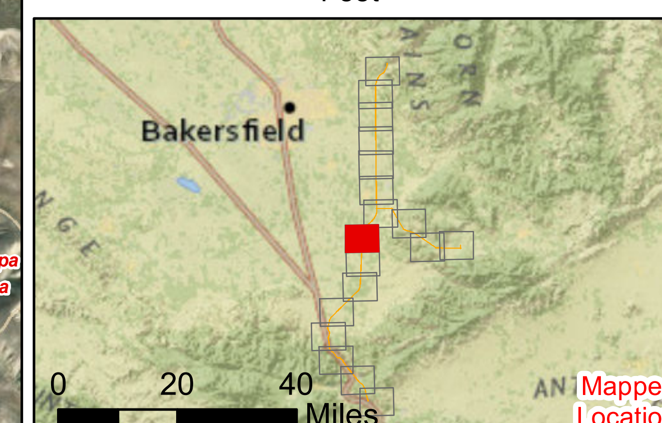

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**CNDDB PLANTS**

ARCADIS

**FIGURESET**
**5.4-3**

\\corpargis\Data\ArcGis\Data\GIS\PROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-3_CNDDB_Plants.mxd 1/27/2022

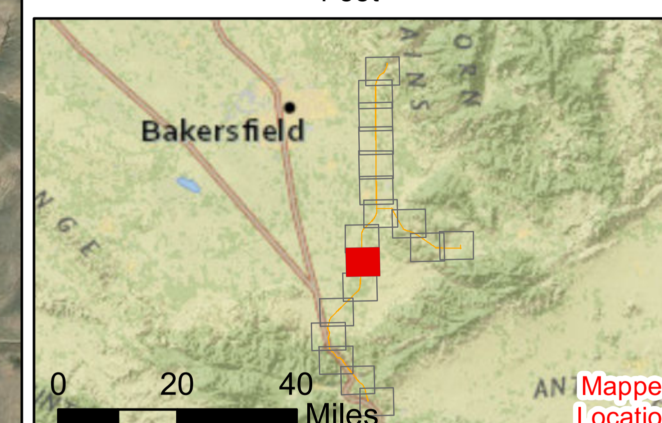

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**CNDDB PLANTS**

ARCADIS

**FIGURESET**
**5.4-3**

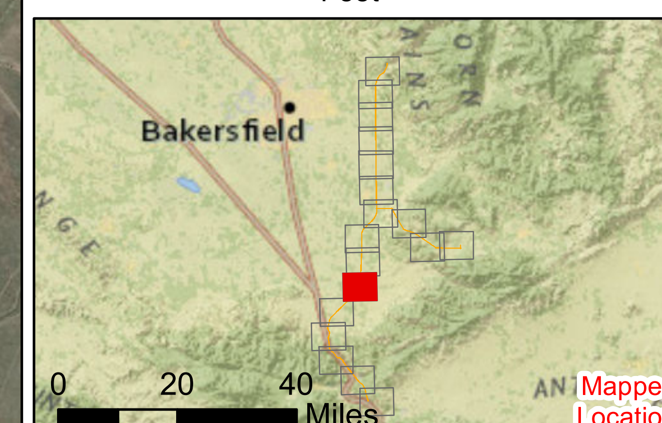

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT CNDDB PLANTS**

ARCADIS

**FIGURESET**
**5.4-3**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-3_CNDDB_Plants.mxd 1/27/2022

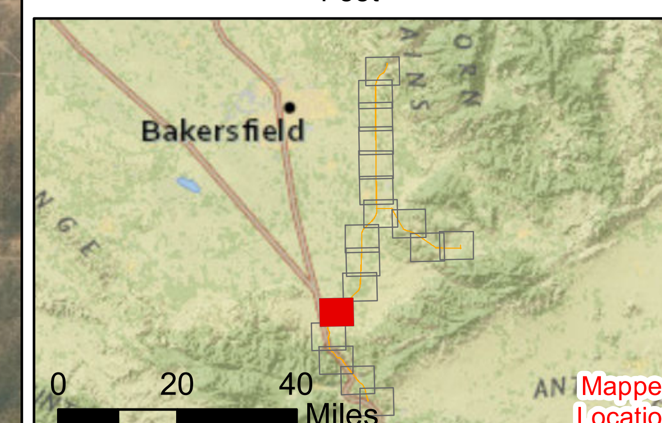

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT CNDDB PLANTS**

ARCADIS

FIGURESET **5.4-3**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-3_CNDDB_Plants.mxd 1/27/2022

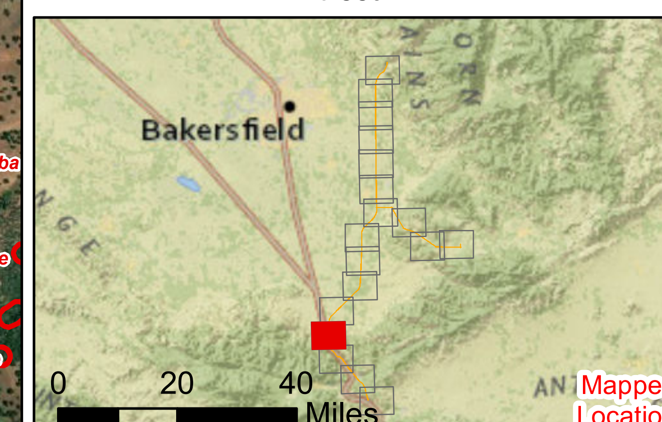

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

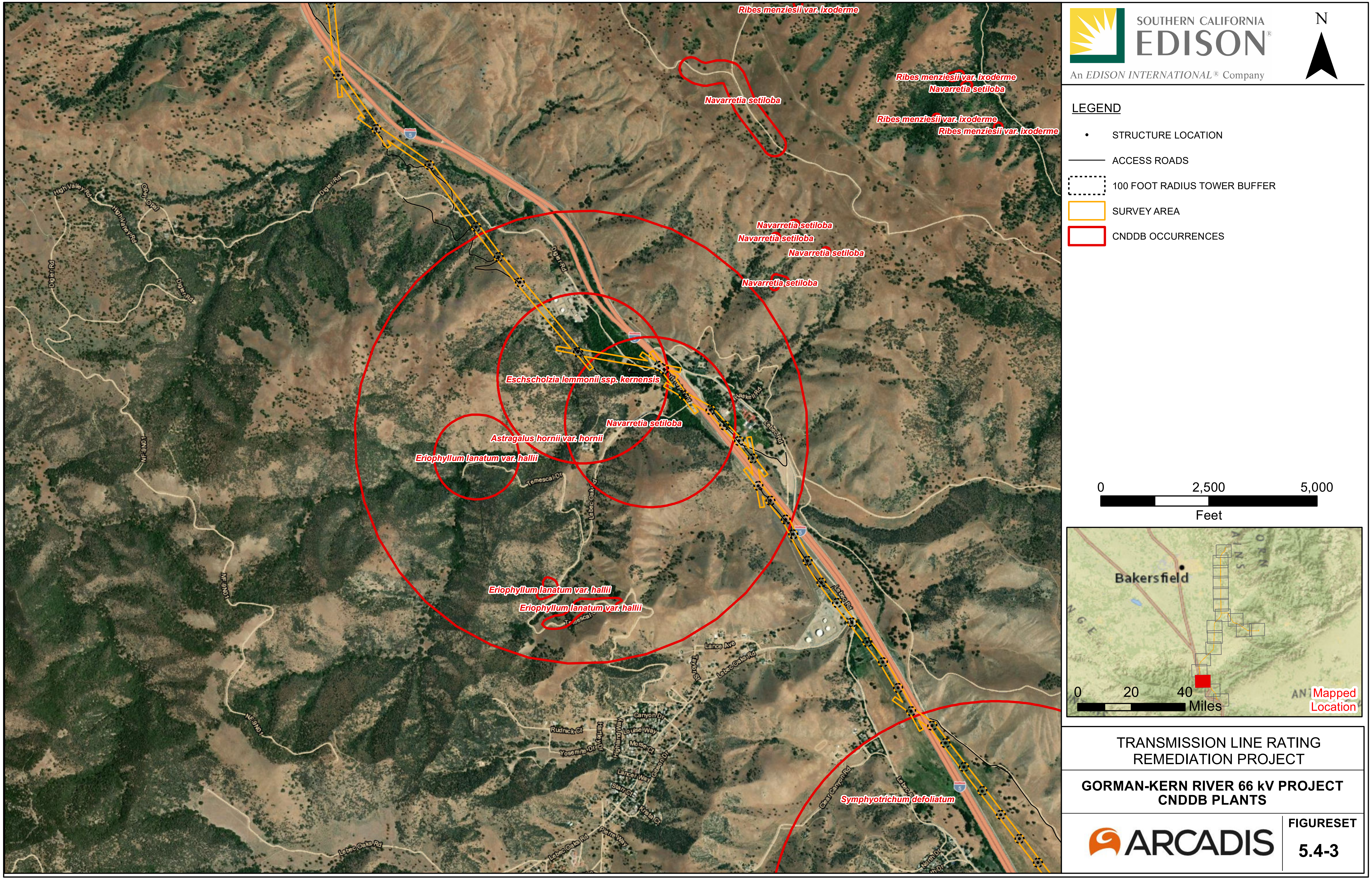
**GORMAN-KERN RIVER 66 kV PROJECT CNDDB PLANTS**

ARCADIS

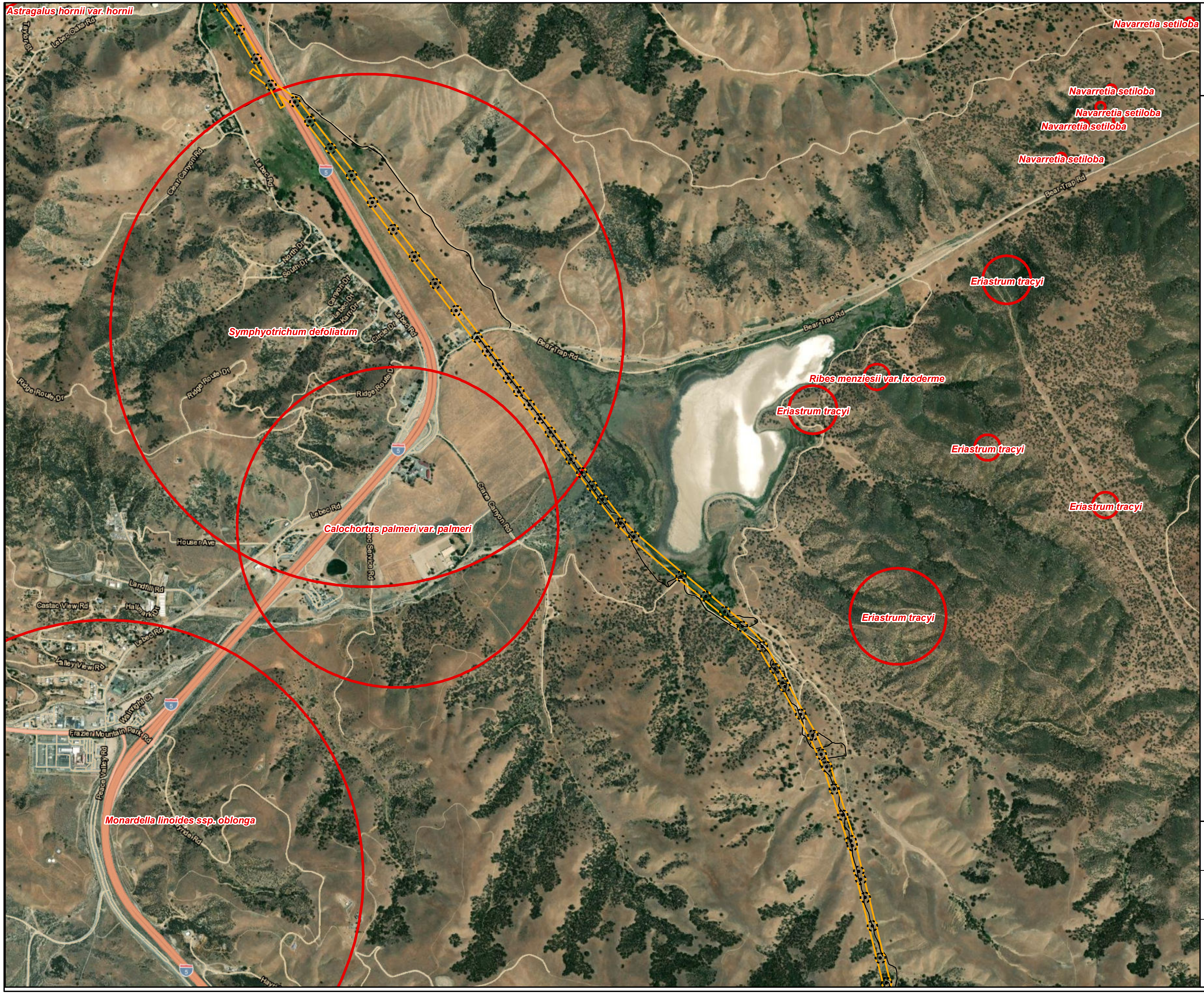
**FIGURESET**

**5.4-3**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-3_CNDDB_Plants.mxd 1/27/2022




\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-3_CNDDB_Plants.mxd 1/27/2022



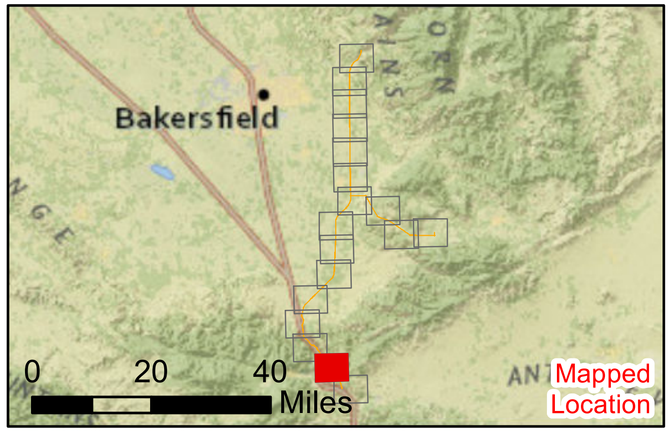



N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**CNDDB PLANTS**

ARCADIS

**FIGURESET**
**5.4-3**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-3_CNDDB_Plants.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

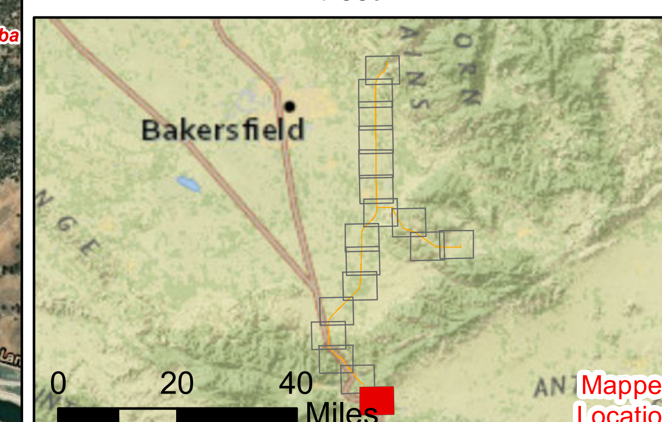
N

LEGEND

- STRUCTURE LOCATION
- SUBSTATION LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000

Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

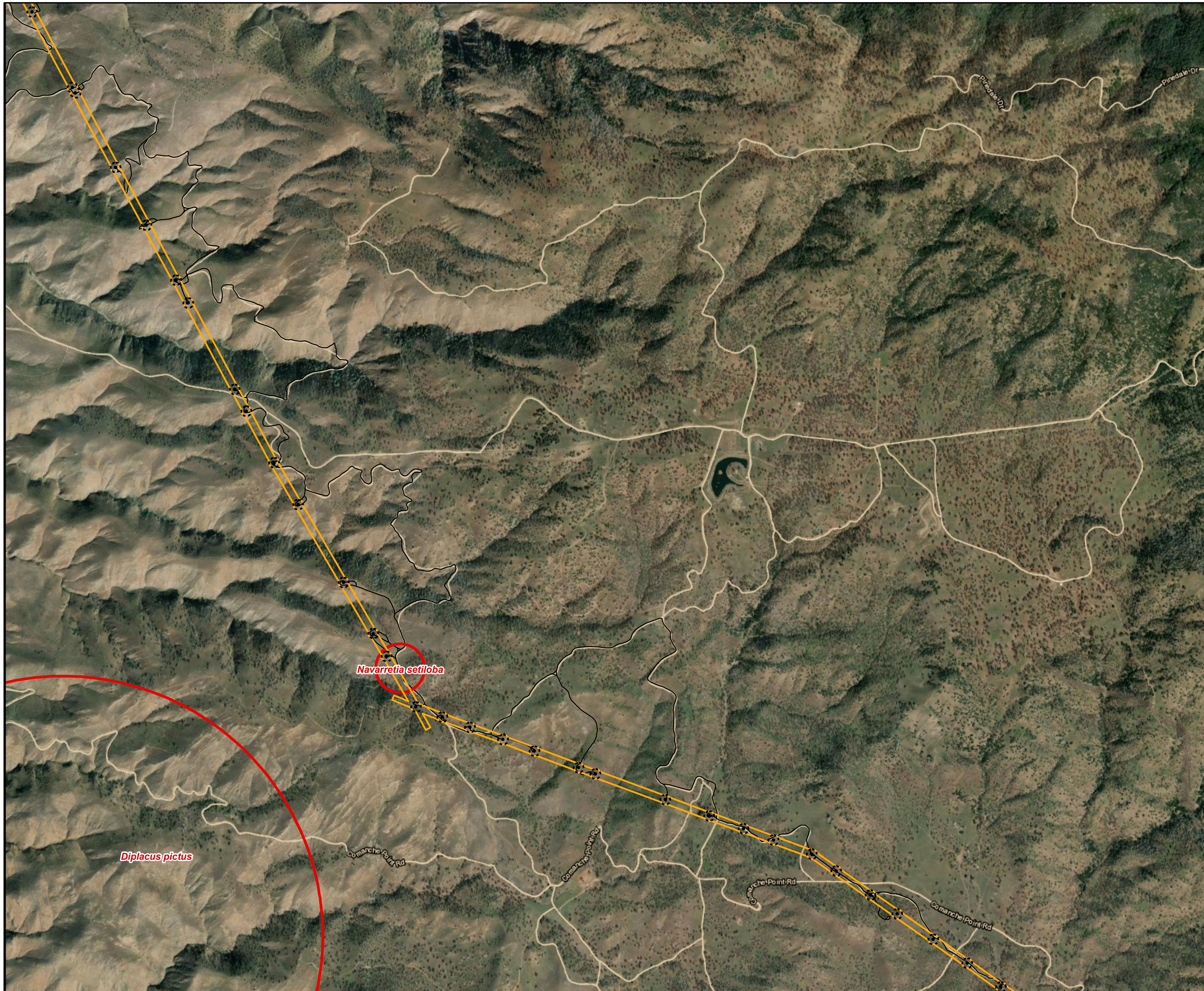
**GORMAN-KERN RIVER 66 kV PROJECT CNDDB PLANTS**

ARCADIS

FIGURESET

5.4-3

\\corpargis\Data\ArcGis\Data\GIS\PROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-3_CNDDB_Plants.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

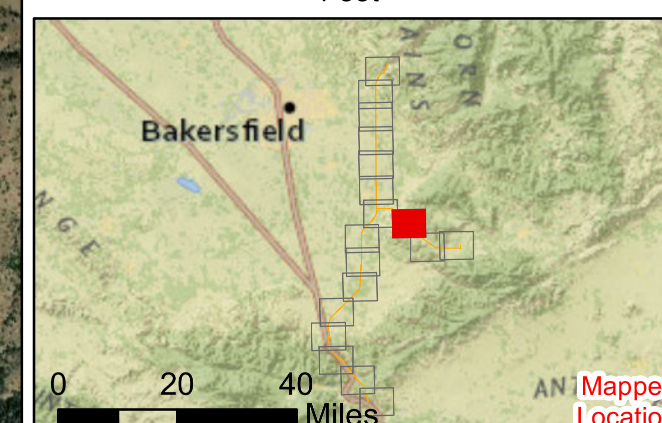
N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000

Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

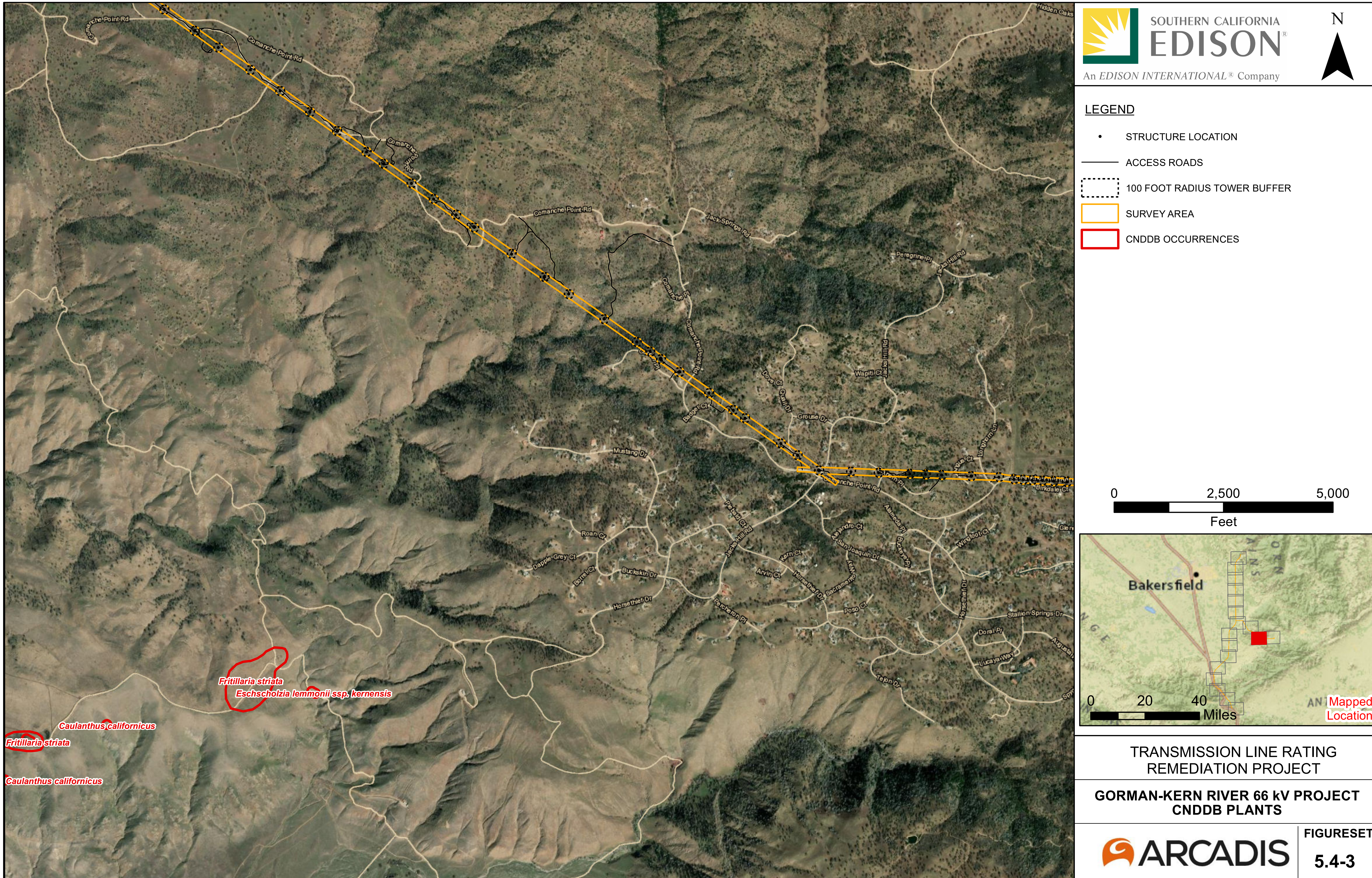
**GORMAN-KERN RIVER 66 kV PROJECT**
**CNDDB PLANTS**

ARCADIS

**FIGURESET**

**5.4-3**

\\corpargis\Data\ArcGis\Data\GIS\PROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-3_CNDDB_Plants.mxd 1/27/2022




TRANSMISSION LINE RATING REMEDIATION PROJECT

GORMAN-KERN RIVER 66 kV PROJECT CNDDB PLANTS

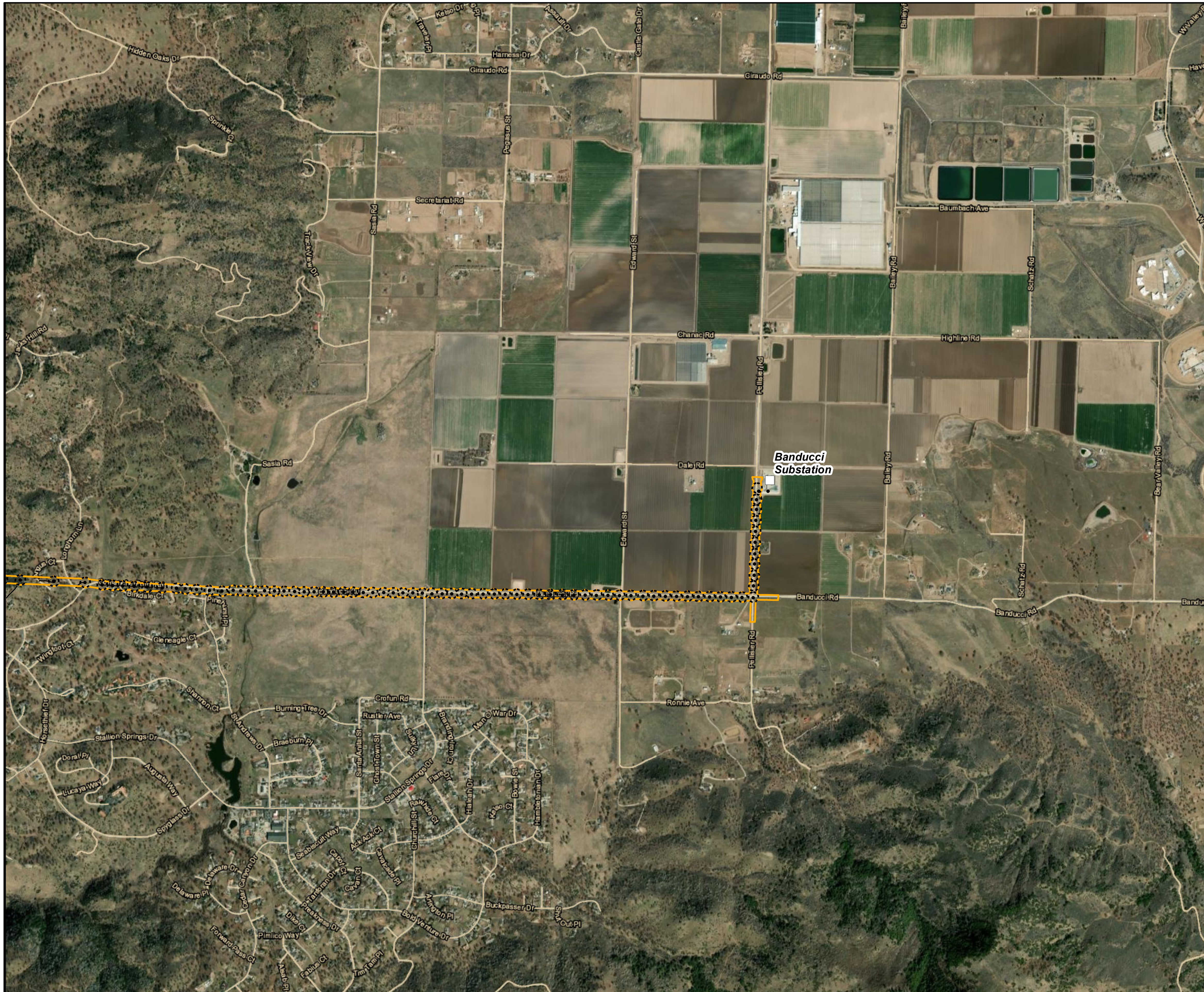
ARCADIS

FIGURESET 5.4-3

SOUTHERN CALIFORNIA EDISON®

An EDISON INTERNATIONAL® Company

N

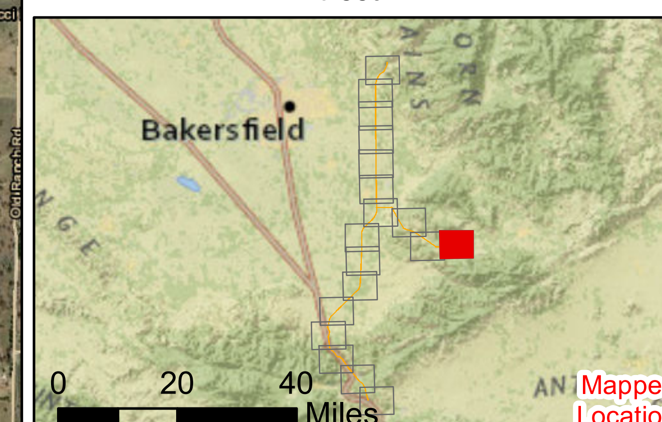



LEGEND

- STRUCTURE LOCATION
- SUBSTATION LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000

Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT CNDDB PLANTS**

ARCADIS

FIGURESET

**5.4-3**

\\corpargis\Data\ArcGis\Data\GIS\PROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-3_CNDDB_Plants.mxd 1/27/2022


SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company

N

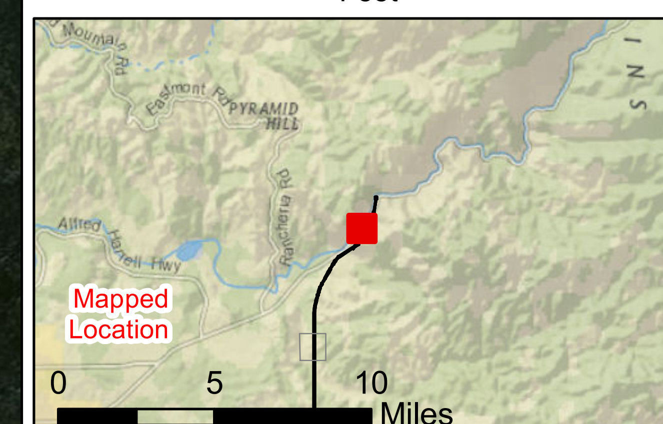
LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE WILDLIFE LOCATIONS**

- DOUBLE-CRESTED CORMORANT *(PHALACROCORAX AURITUS)*

0 500 1,000
Feet



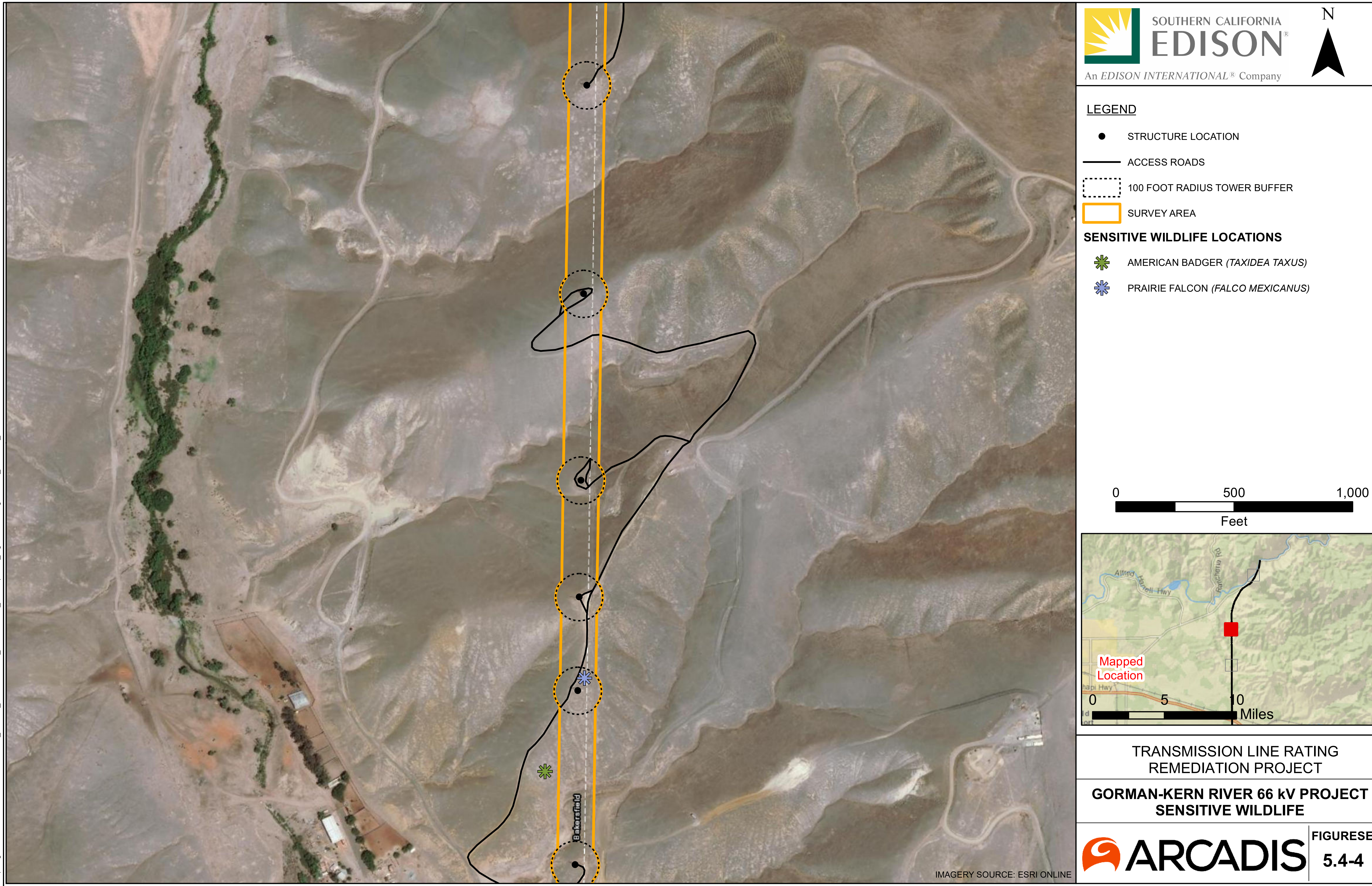

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE WILDLIFE**

ARCADIS

**FIGURESET 5.4-4**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE WILDLIFE**

ARCADIS

FIGURESET 5.4-4

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

N

LEGEND

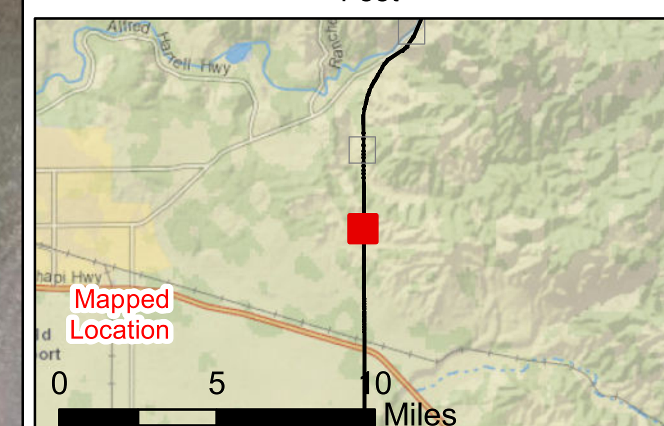
- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE WILDLIFE LOCATIONS**

- PRAIRIE FALCON *(FALCO MEXICANUS)*

0 500 1,000

Feet



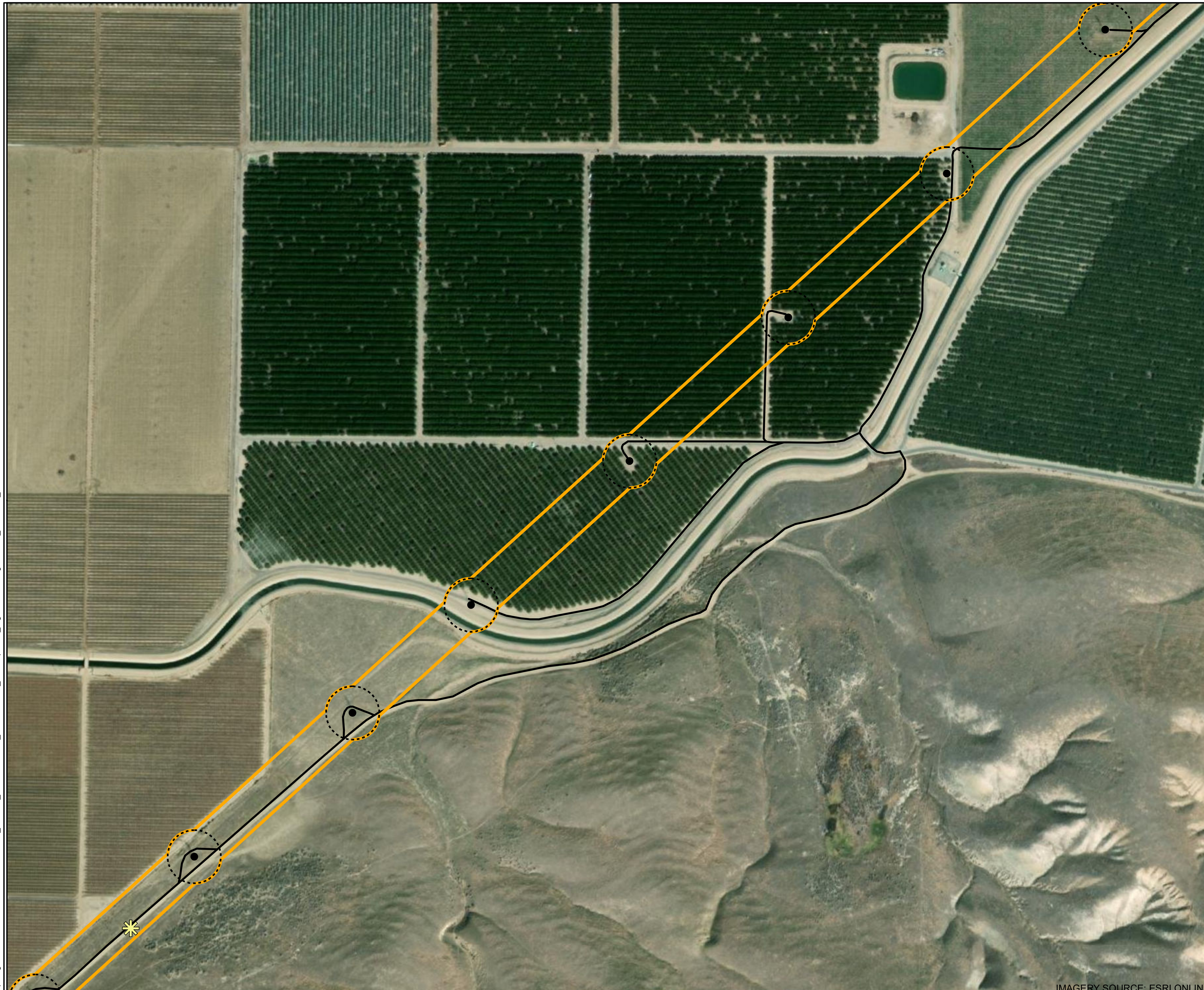

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE WILDLIFE**

ARCADIS

**FIGURESET 5.4-4**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

STRUCTURE LOCATION

ACCESS ROADS

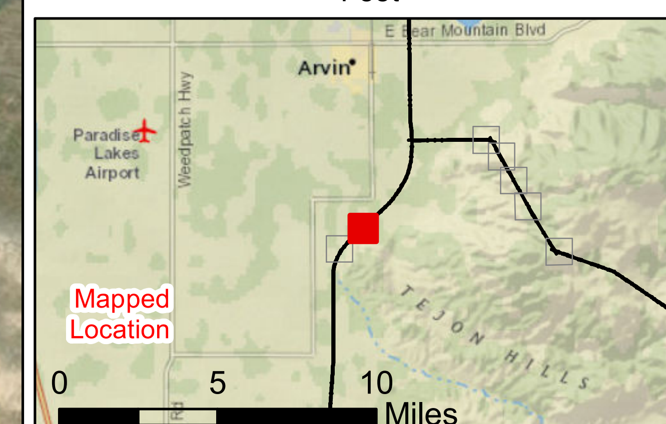
100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

SENSITIVE WILDLIFE LOCATIONS

SAN JOAQUIN KIT FOX *(VULPES MACROTIS MUTICA)*

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE WILDLIFE**

ARCADIS

FIGURESET
**5.4-4**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022


SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company

N

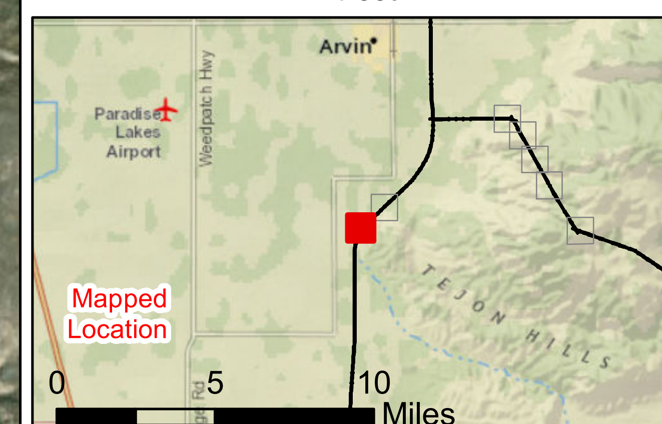
LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE WILDLIFE LOCATIONS**

- SAN JOAQUIN KIT FOX *(VULPES MACROTIS MUTICA)*

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**SENSITIVE WILDLIFE**

ARCADIS

FIGURESET
5.4-4

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

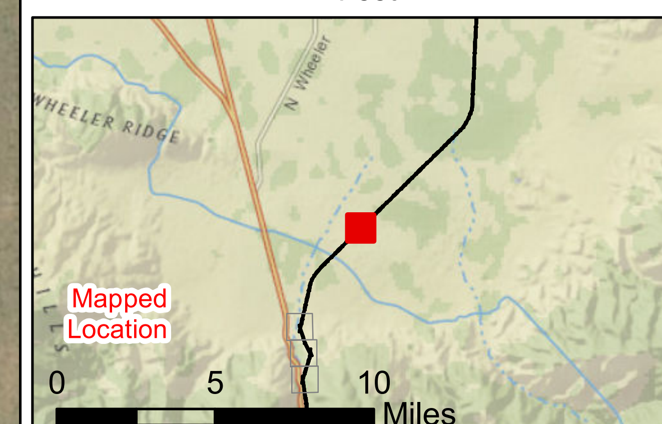
LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE WILDLIFE LOCATIONS**

- CALIFORNIA HORNED LARK *(EREMOPHILA ALPESTRIS ACTIA)*

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE WILDLIFE**

ARCADIS

**FIGURESET 5.4-4**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

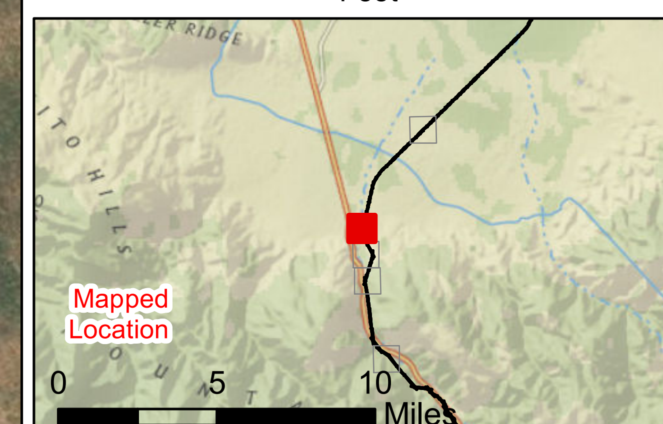
LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE WILDLIFE LOCATIONS**

- COOPER'S HAWK *(ACCIPITER COOPERII)*
- LOGGERHEAD SHRIKE *(LANIUS LUDOVICIANUS)*
- MONARCH BUTTERFLY *(DANAUS PLEXIPPUS)*

0 500 1,000
Feet



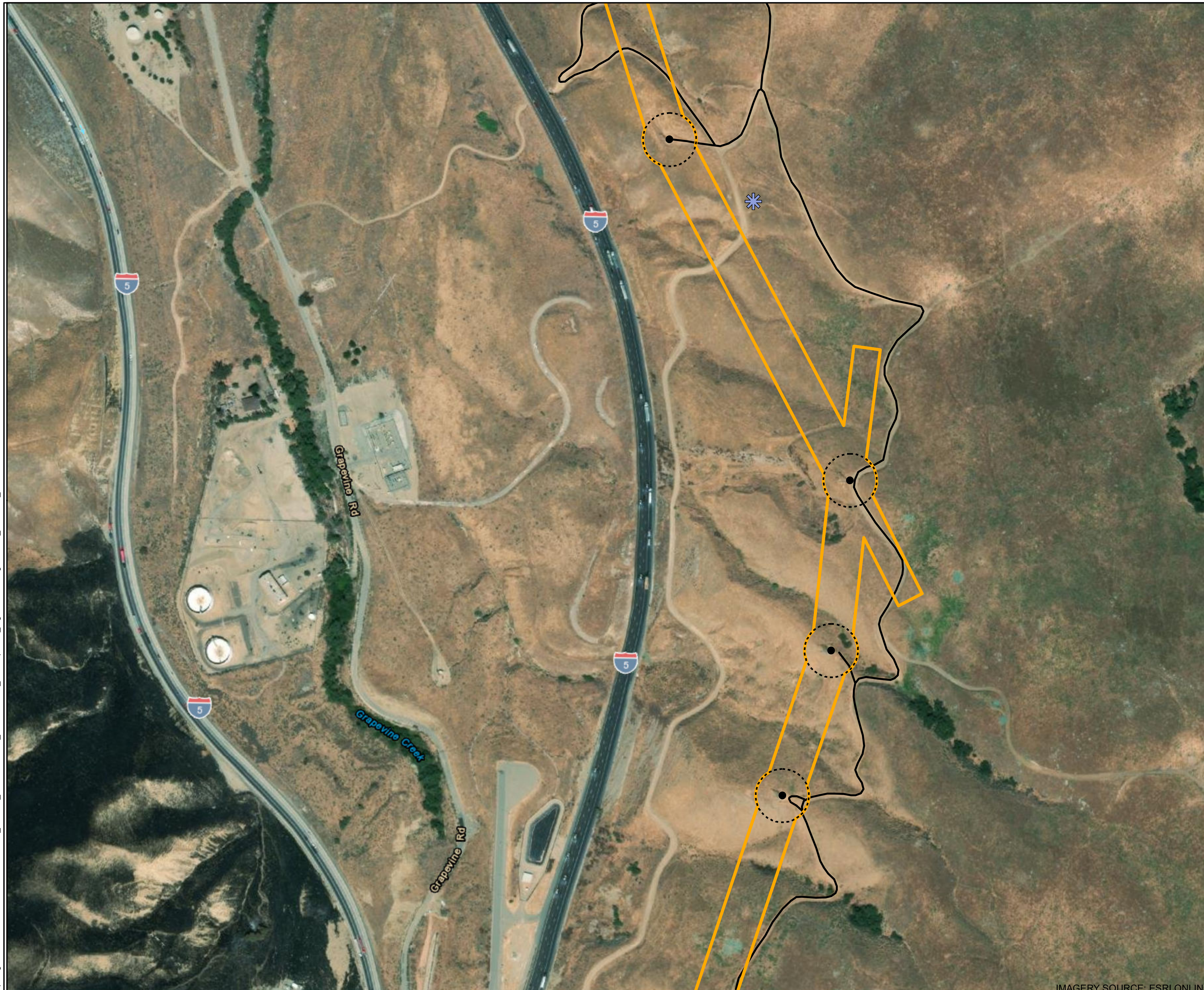

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE WILDLIFE**

ARCADIS

**FIGURESET 5.4-4**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

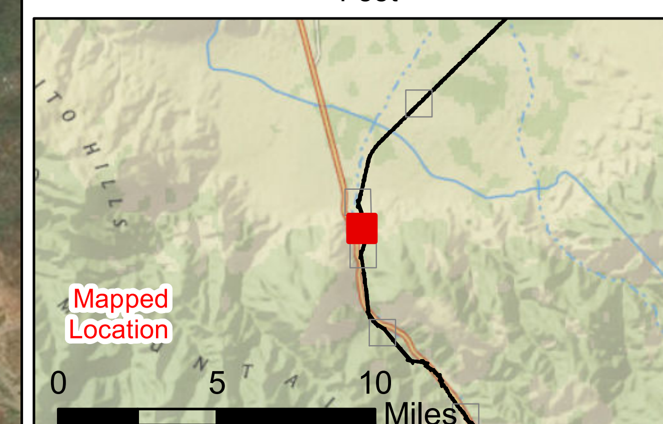
LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE WILDLIFE LOCATIONS**

- PRAIRIE FALCON *(FALCO MEXICANUS)*

0 500 1,000
Feet




TRANSMISSION LINE RATING
REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**SENSITIVE WILDLIFE**

ARCADIS

**FIGURESET**
**5.4-4**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

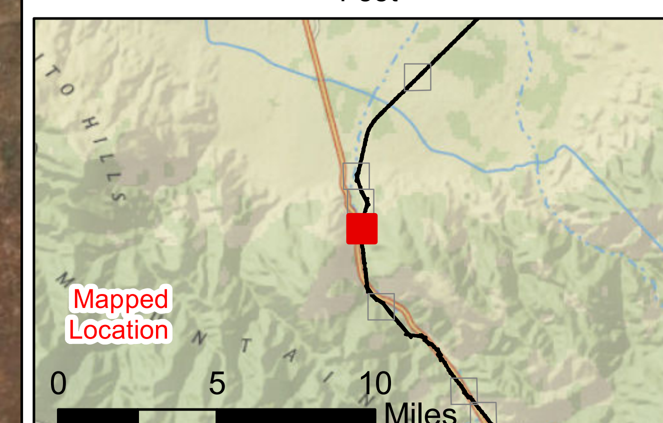
LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE WILDLIFE LOCATIONS**

- OREGON VESPER SPARROW *(POOECETES GRAMINEUS AFFINIS)*

0 500 1,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE WILDLIFE**

ARCADIS

**FIGURESET**
**5.4-4**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022





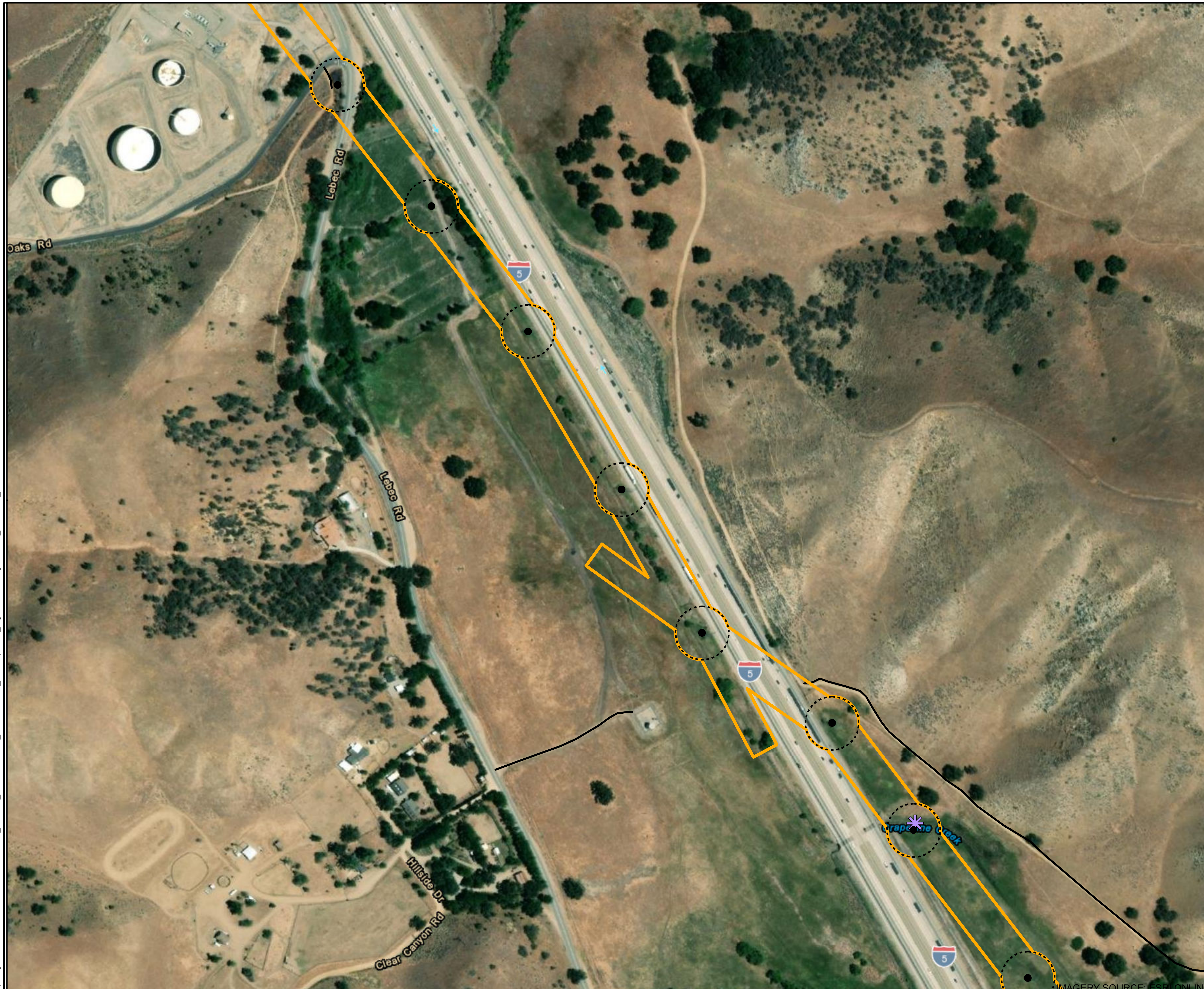
TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE WILDLIFE**

ARCADIS

FIGURESET 5.4-4

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

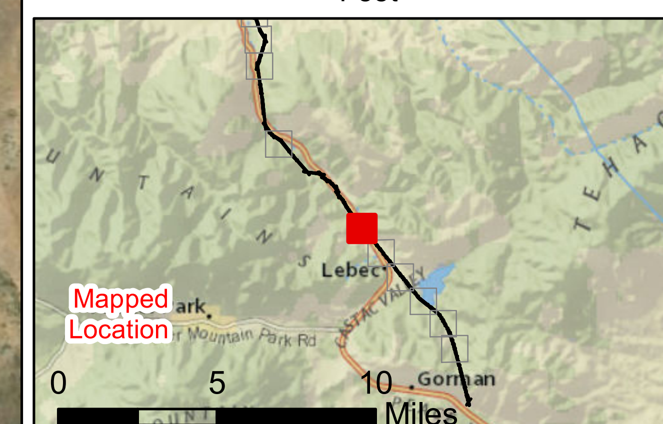
LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE WILDLIFE LOCATIONS**

- WHITE-FACED IBIS *(PLEGADIS CHIHI)*

0 500 1,000
Feet



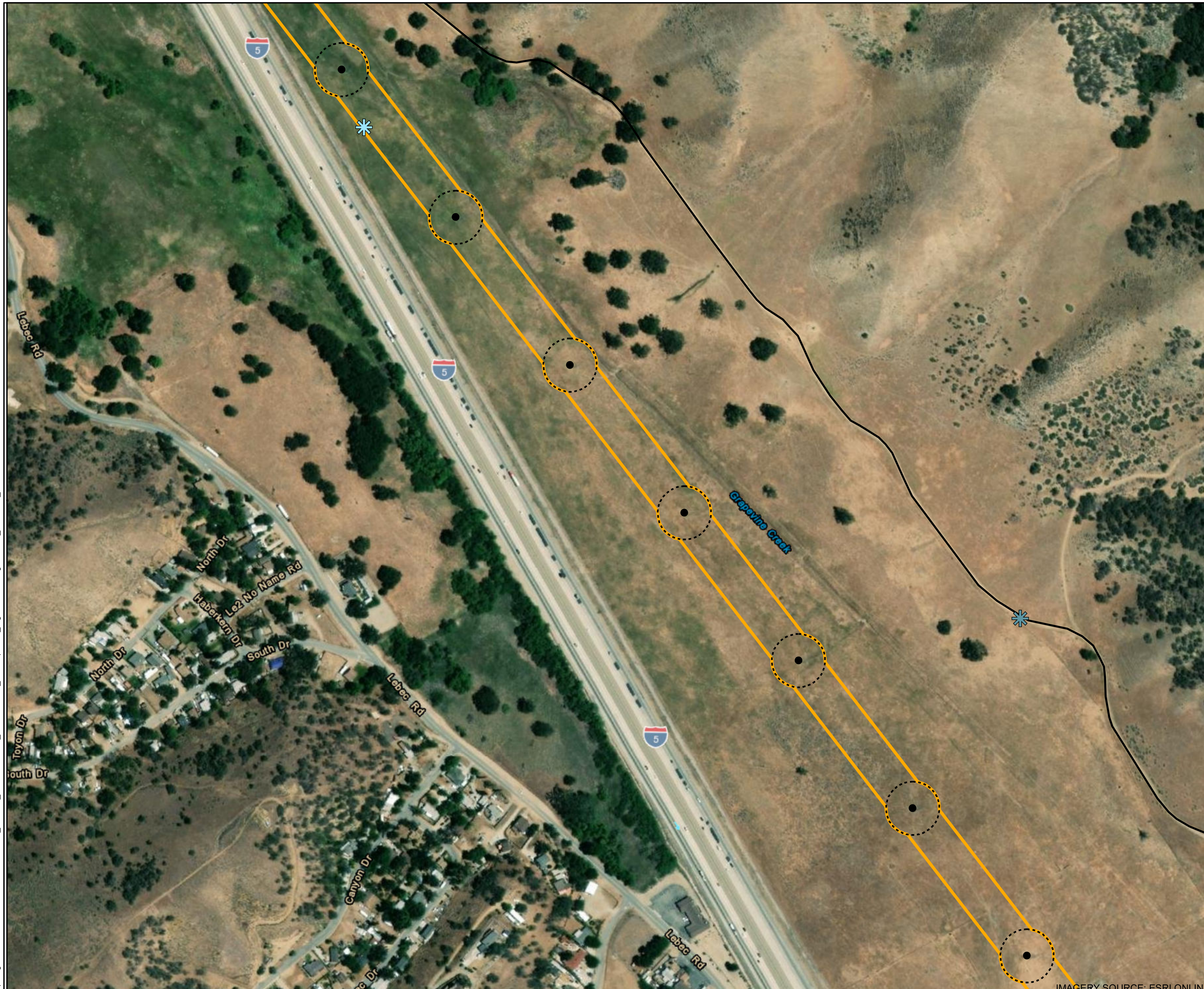

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE WILDLIFE**

ARCADIS

**FIGURESET 5.4-4**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

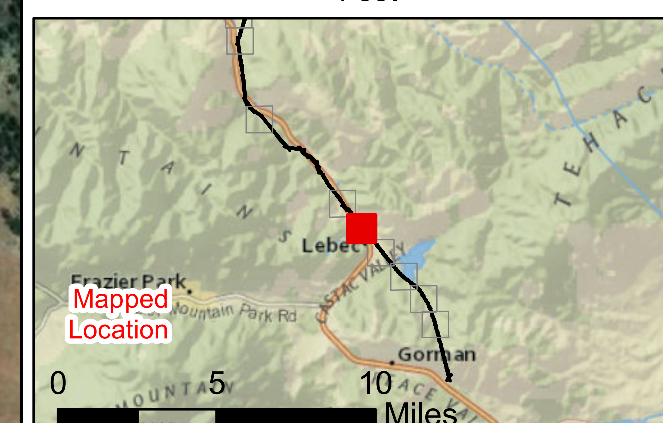
LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

SENSITIVE WILDLIFE LOCATIONS

- COOPER'S HAWK *(ACCIPITER COOPERII)*
- TRICOLORED BLACKBIRD *(AGELAIUS TRICOLOR)*

0 500 1,000
Feet



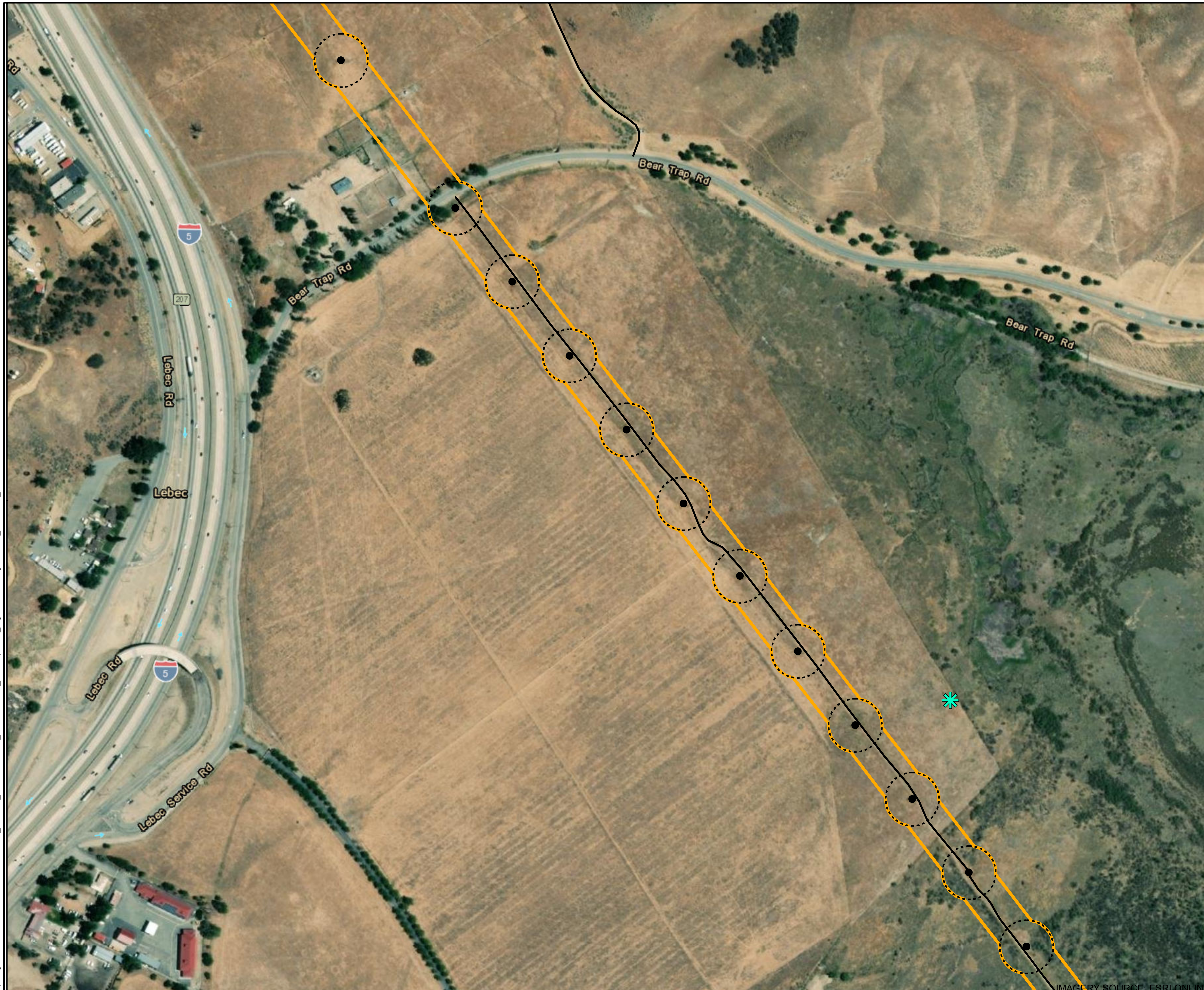

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE WILDLIFE**

ARCADIS

FIGURESET 5.4-4

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

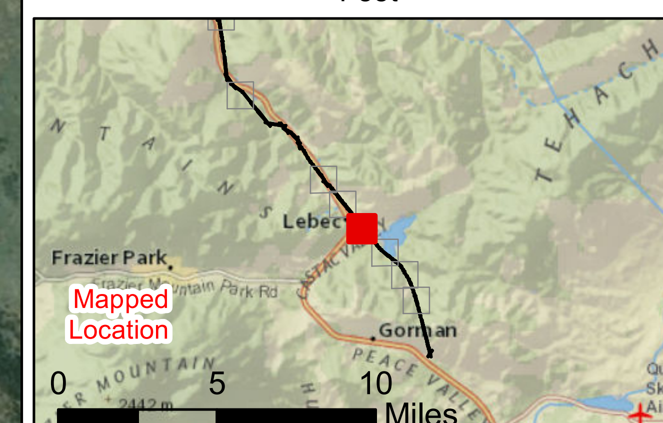
LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE WILDLIFE LOCATIONS**

- NORTHERN HARRIER *(CIRCUS CYANEUS)*

0 500 1,000
Feet




TRANSMISSION LINE RATING
REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**SENSITIVE WILDLIFE**

ARCADIS

**FIGURESET**
**5.4-4**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022


SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company

N

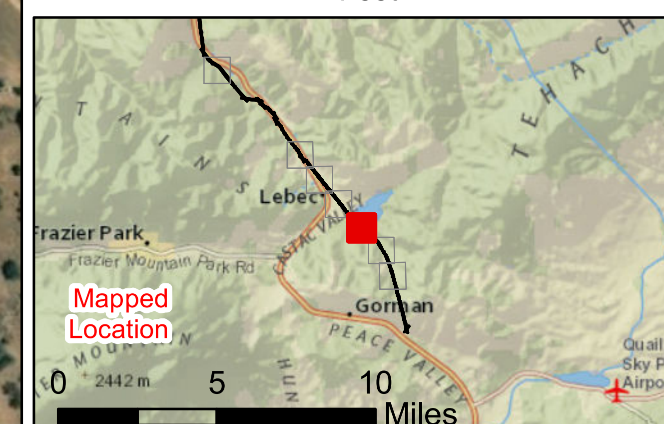
LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

SENSITIVE WILDLIFE LOCATIONS

- VAUX'S SWIFT *(CHAETURA VAUXI)*
- YELLOW WARBLER *(SETOPHAGA PETECHIA)*

0 500 1,000
Feet




TRANSMISSION LINE RATING
REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**SENSITIVE WILDLIFE**

ARCADIS

**FIGURESET**
**5.4-4**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

STRUCTURE LOCATION

ACCESS ROADS

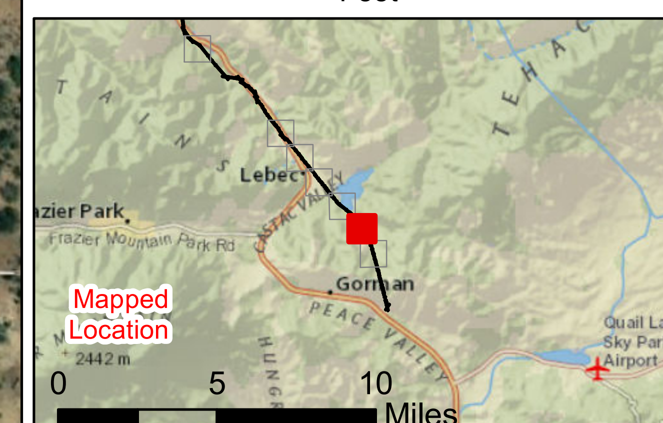
100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

**SENSITIVE WILDLIFE LOCATIONS**

AMERICAN BADGER *(TAXIDEA TAXUS)*

0 500 1,000
Feet



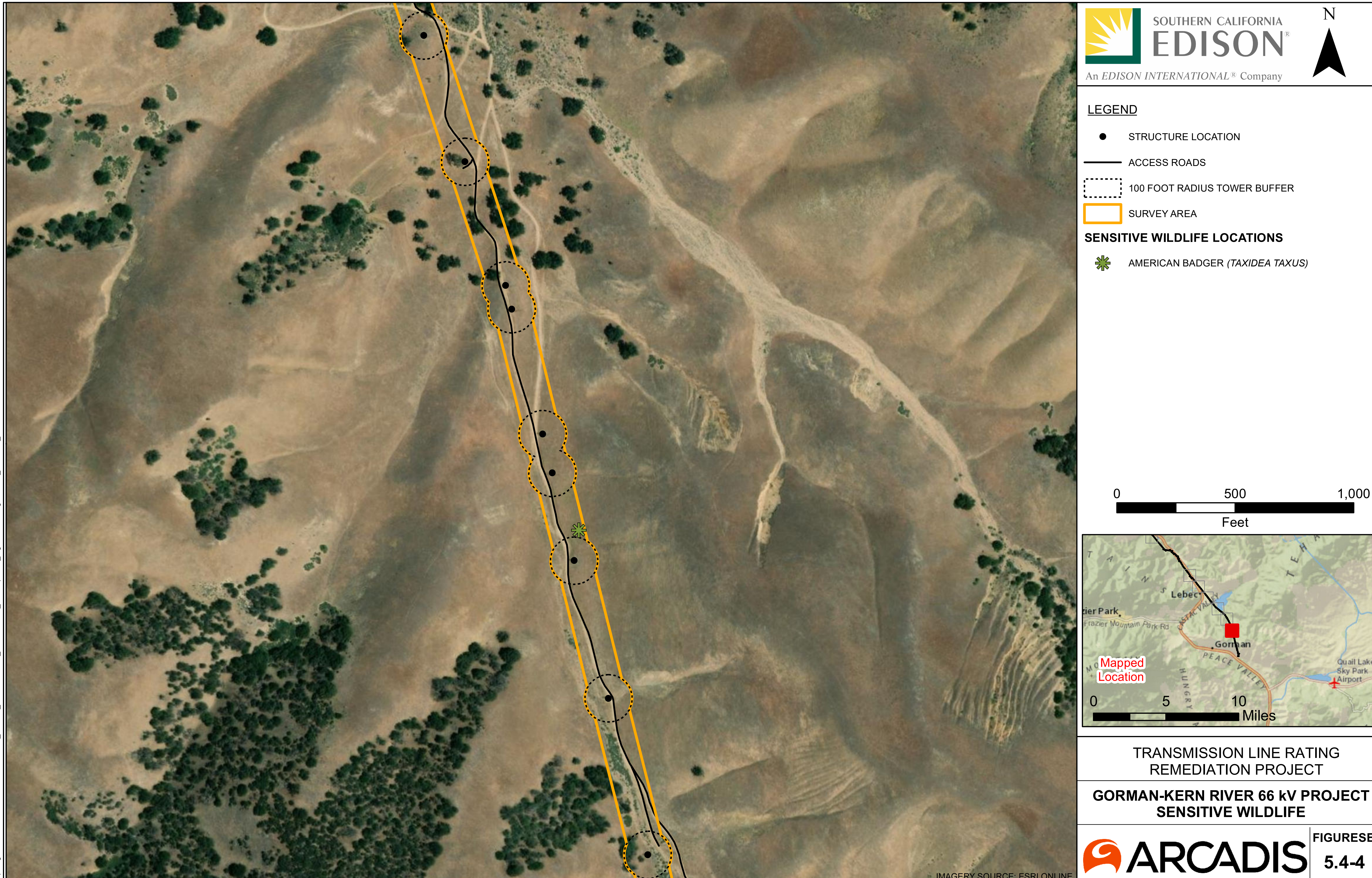

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE WILDLIFE**

ARCADIS

**FIGURESET 5.4-4**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE WILDLIFE**

ARCADIS

FIGURESET 5.4-4

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON®

An EDISON INTERNATIONAL® Company

N

LEGEND

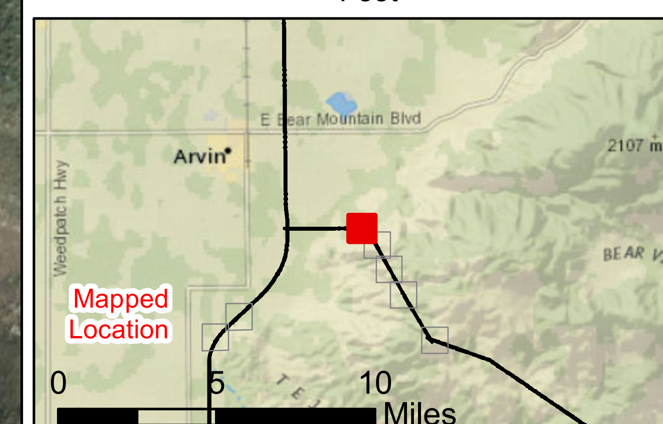
- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE WILDLIFE LOCATIONS**

- BURROWING OWL *(ATHENE CUNICULARIA)*
- GOLDEN EAGLE *(AQUILA CHRYSAETOS)*

0 500 1,000

Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE WILDLIFE**

ARCADIS

**FIGURESET 5.4-4**

\\corpargis\Data\ArcGisData\GIS\PROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

N

LEGEND

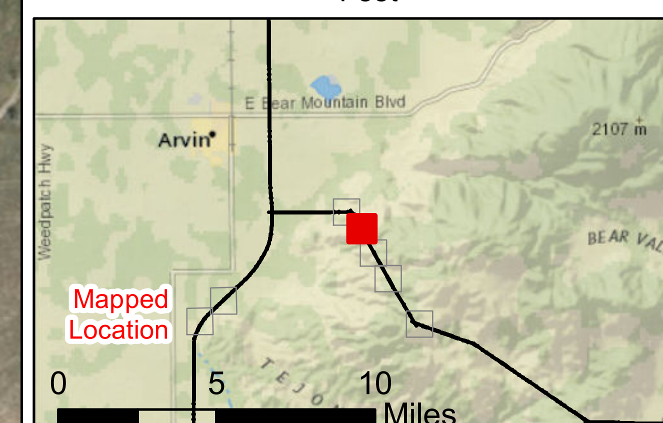
- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE WILDLIFE LOCATIONS**

- PURPLE MARTIN *(PROGNE SUBIS)*

0 500 1,000

Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE WILDLIFE**

ARCADIS

**FIGURESET 5.4-4**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLRR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

N

LEGEND

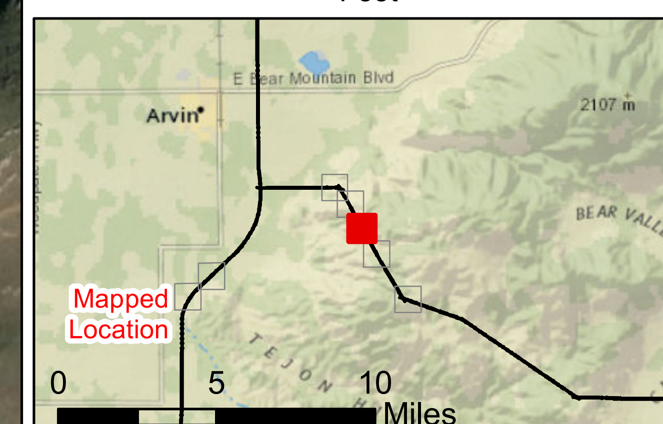
- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

SENSITIVE WILDLIFE LOCATIONS

- PRAIRIE FALCON *(FALCO MEXICANUS)*

0 500 1,000

Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE WILDLIFE**

ARCADIS

FIGURESET 5.4-4

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE WILDLIFE LOCATIONS**

- LOGGERHEAD SHRIKE *(LANIUS LUDOVICIANUS)*

0 500 1,000
Feet


TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE WILDLIFE**

ARCADIS

**FIGURESET 5.4-4**

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-4_Sensitive_Wildlife.mxd 1/27/2022


SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

**SENSITIVE WILDLIFE LOCATIONS**

- GOLDEN EAGLE *(AQUILA CHRYSAETOS)*
- WESTERN SPADEFOOT *(SPEA HAMMONDII)*

0 500 1,000

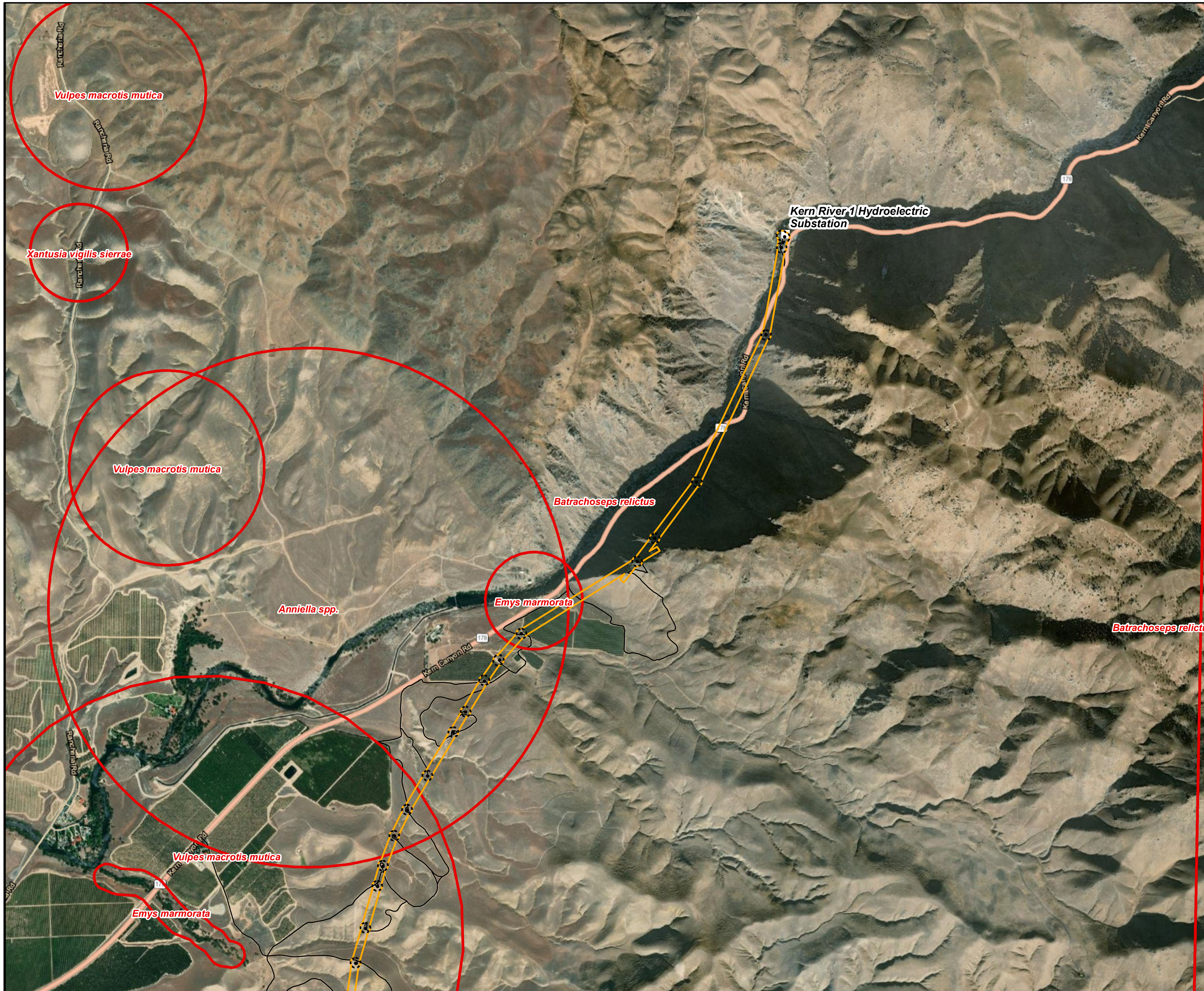
Feet


TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT SENSITIVE WILDLIFE**

ARCADIS

**FIGURESET 5.4-4**



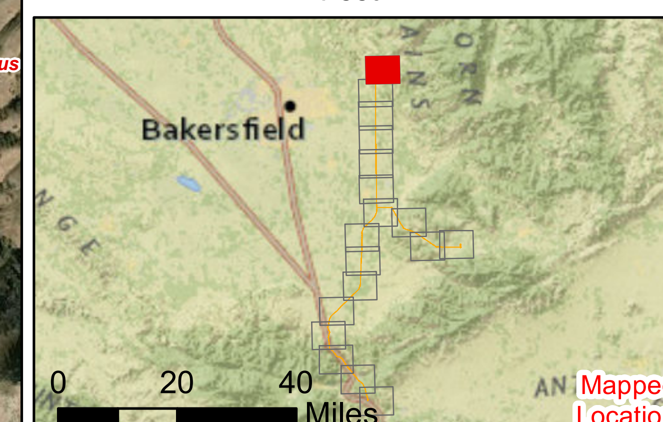

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- SUBSTATION LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

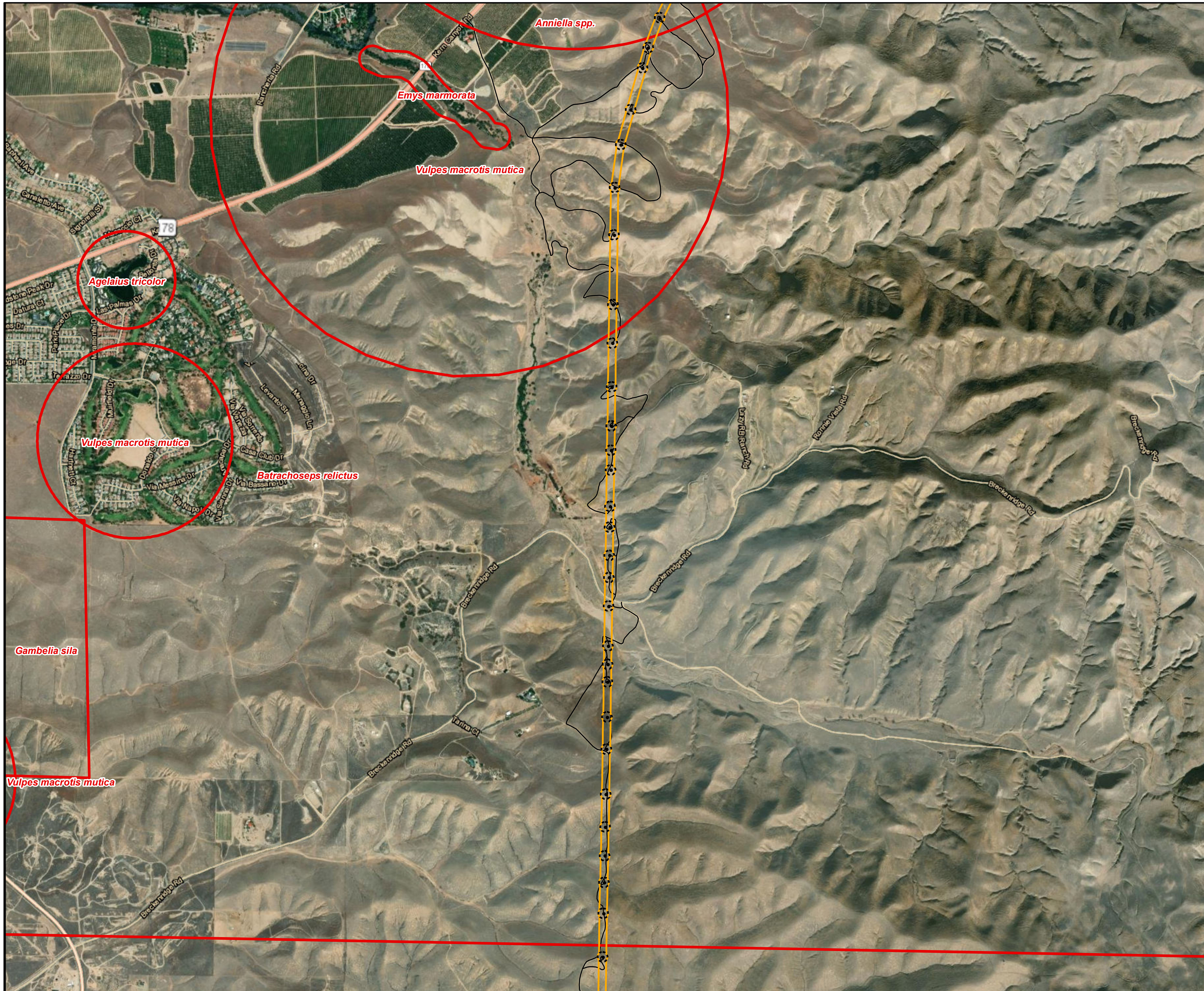
**GORMAN-KERN RIVER 66 kV PROJECT CNDDB WILDLIFE**

ARCADIS

**FIGURESET**

**5.4-5**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-5_CNDDB_Wildlife.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

• STRUCTURE LOCATION

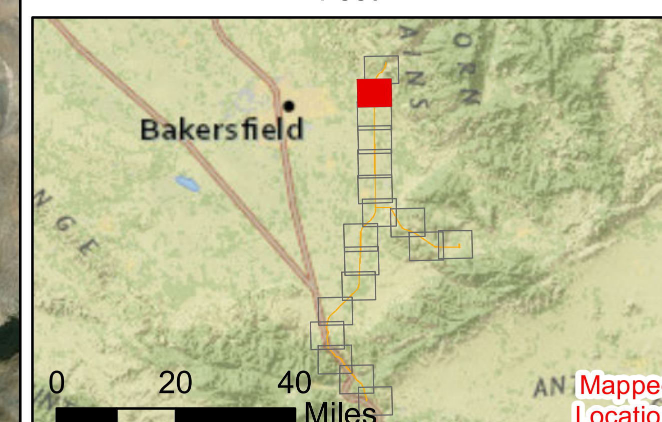
ACCESS ROADS

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

CNDDB OCCURRENCES

0 2,500 5,000
Feet



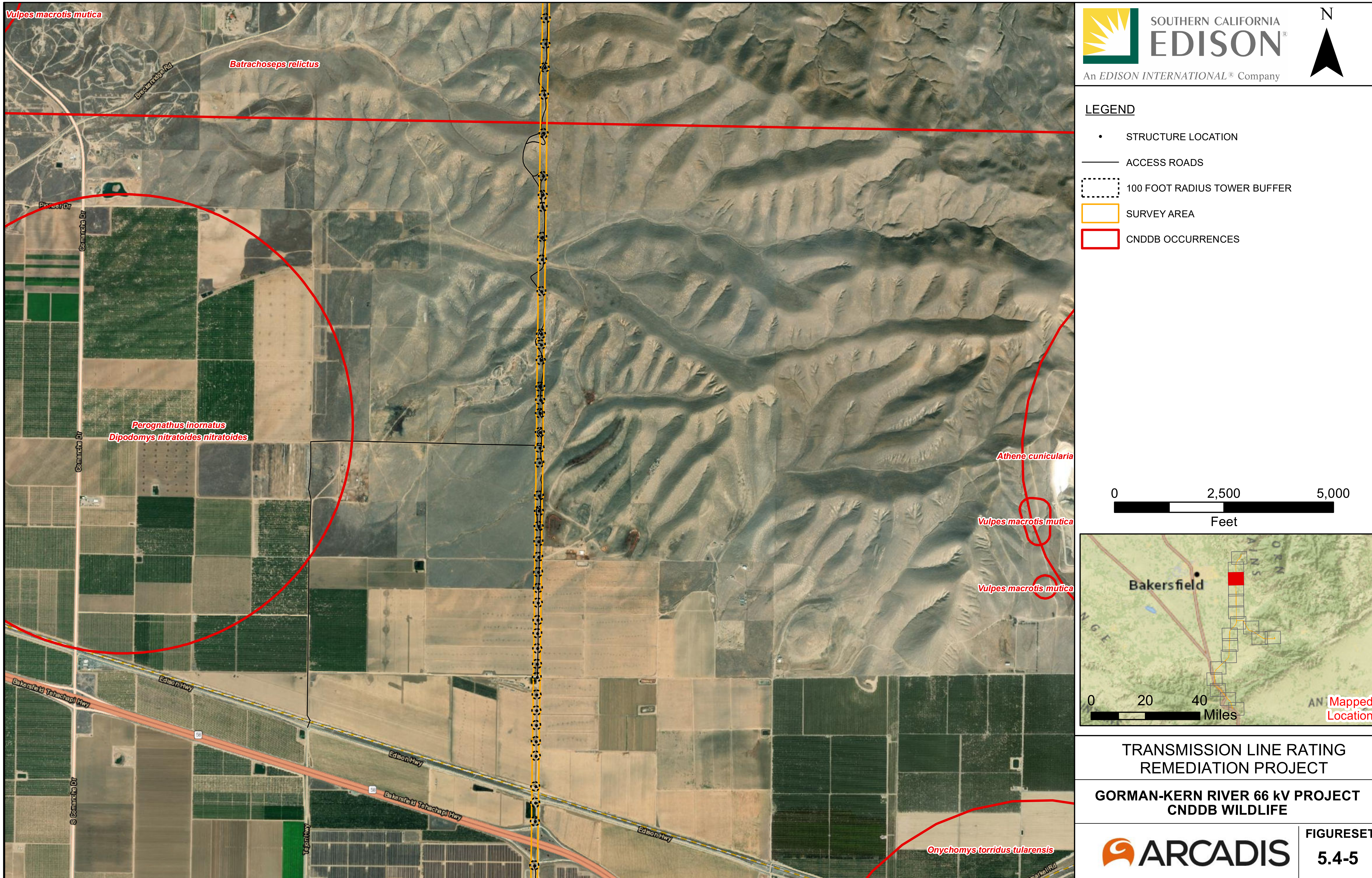

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**CNDDB WILDLIFE**

ARCADIS

FIGURESET
5.4-5

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-5_CNDDB_Wildlife.mxd 1/27/2022



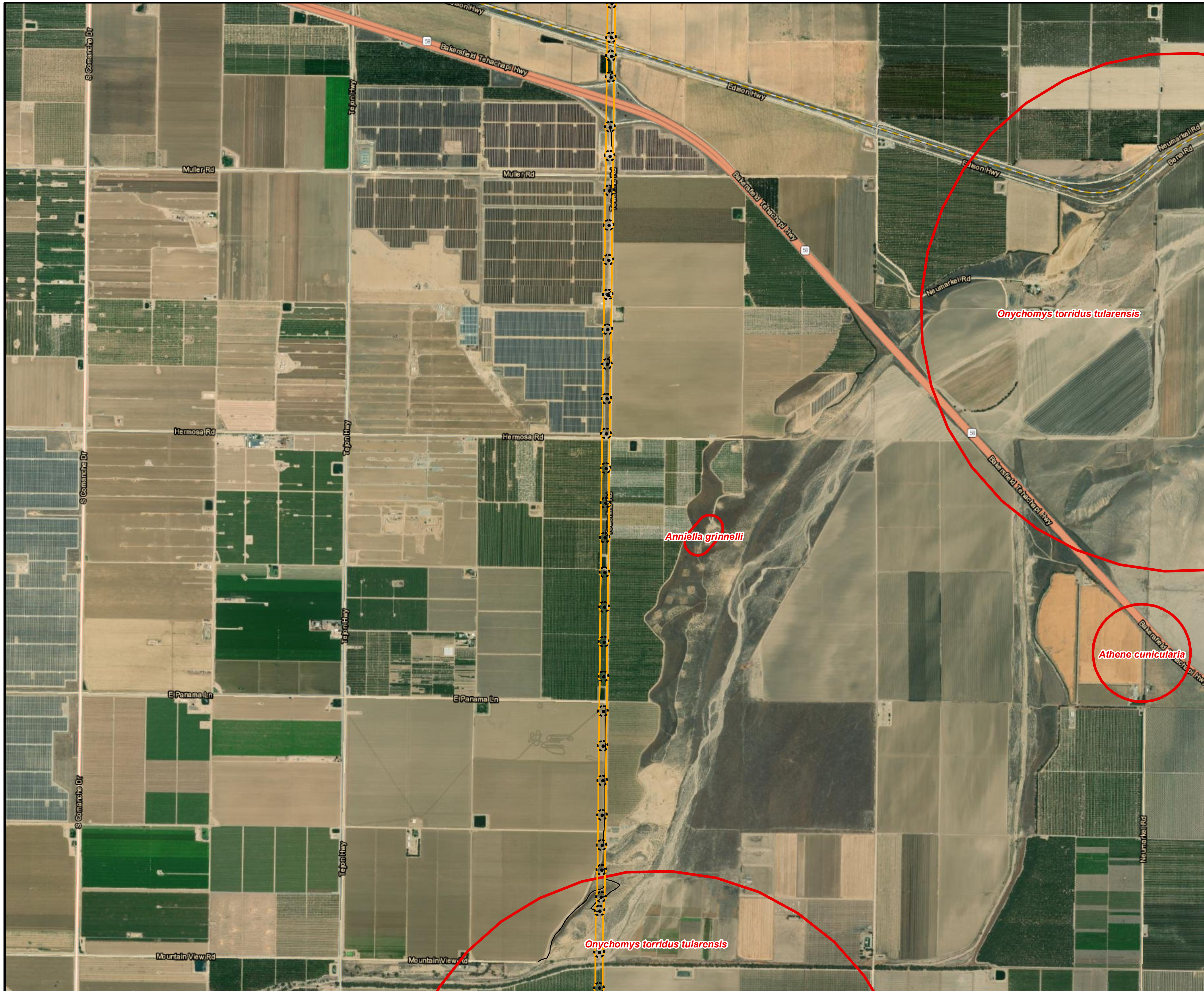

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT**
**CNDDB WILDLIFE**

ARCADIS

FIGURESET
5.4-5

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-5_CNDDB_Wildlife.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON®

An EDISON INTERNATIONAL® Company

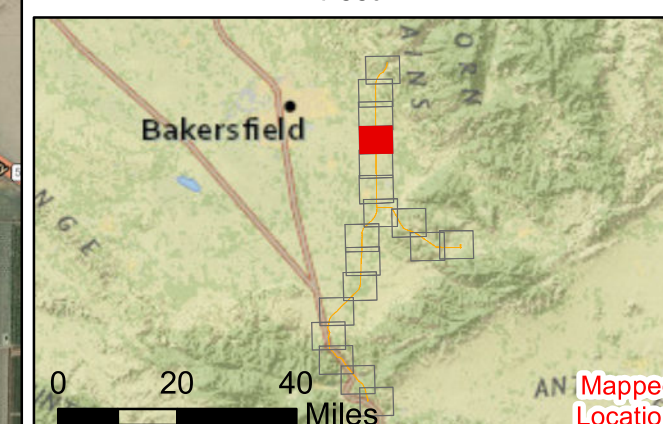
N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000

Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

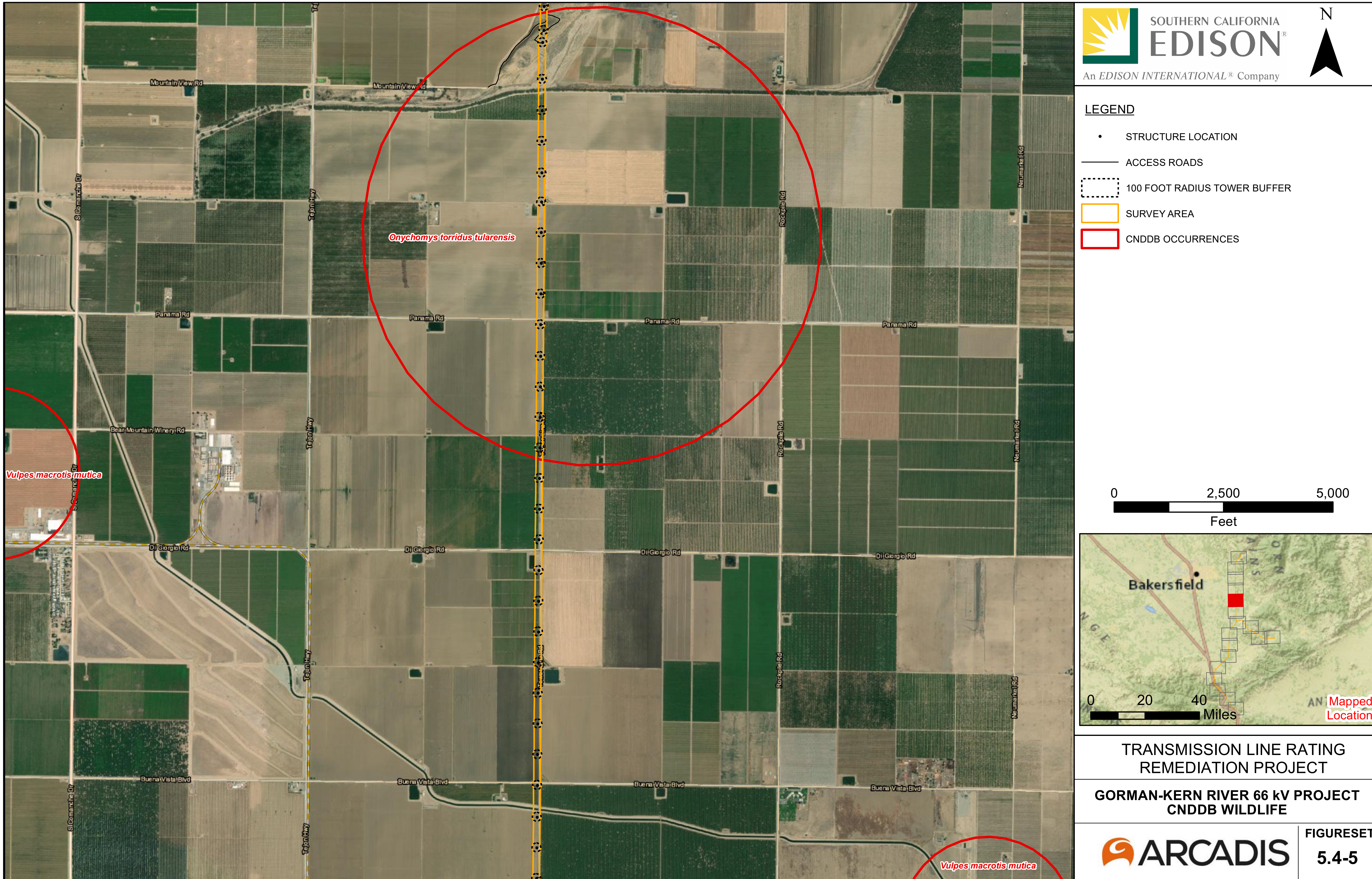
**GORMAN-KERN RIVER 66 kV PROJECT CNDDB WILDLIFE**

ARCADIS

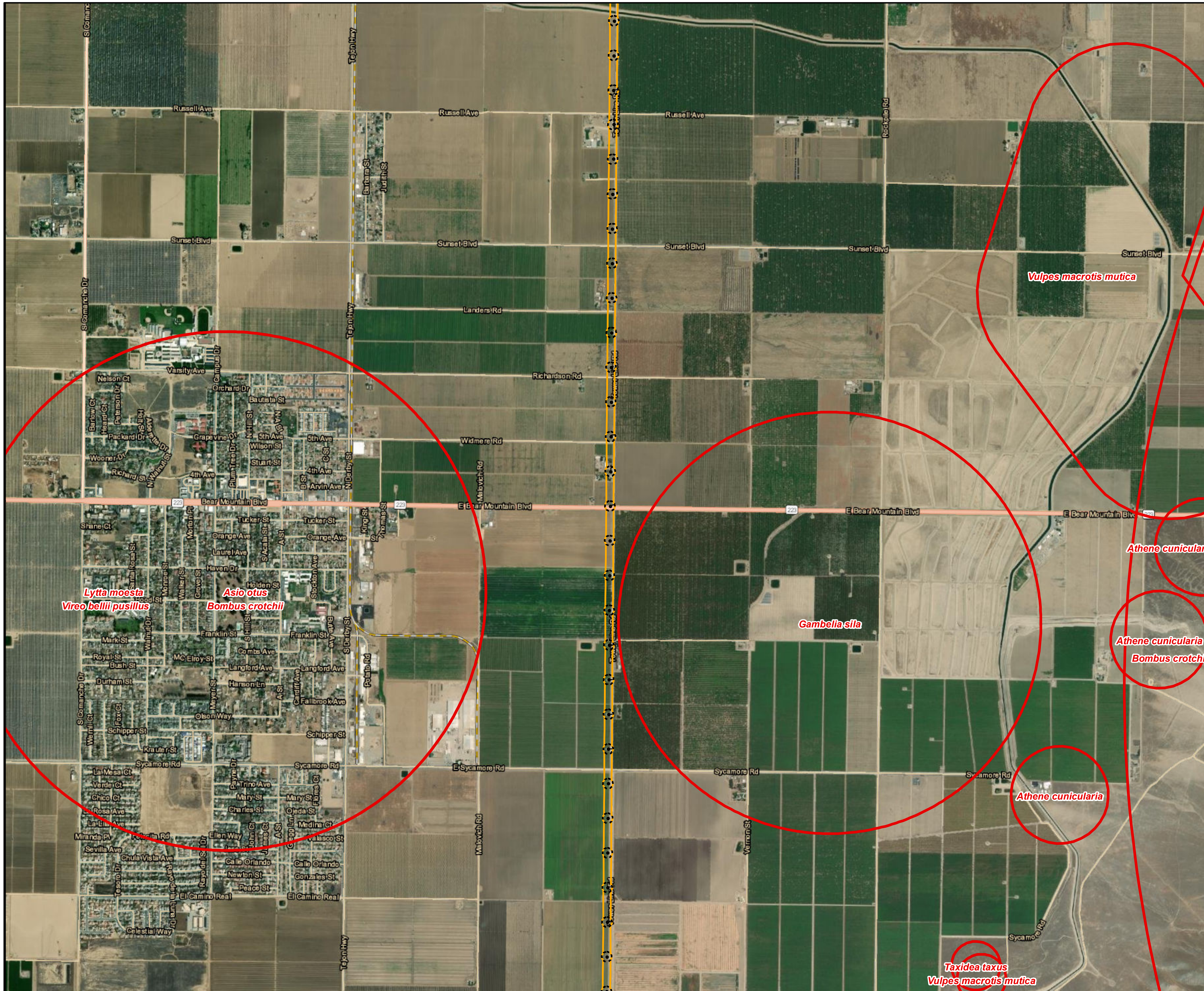
**FIGURESET**

**5.4-5**

\\corpargis\Data\ArcGis\Data\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-5_CNDDB_Wildlife.mxd 1/27/2022




\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-5_CNDDB_Wildlife.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON®

An EDISON INTERNATIONAL® Company

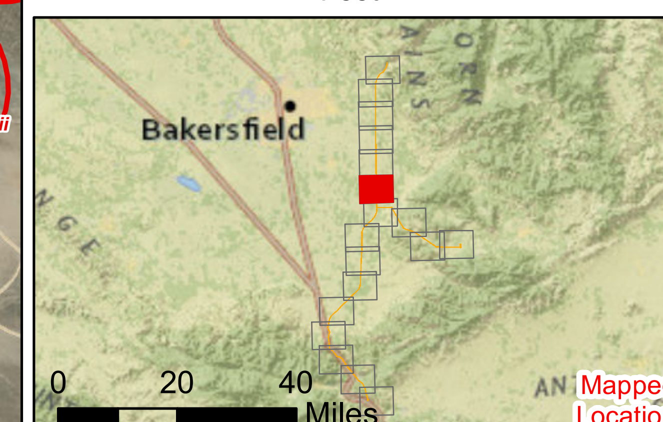
N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000

Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

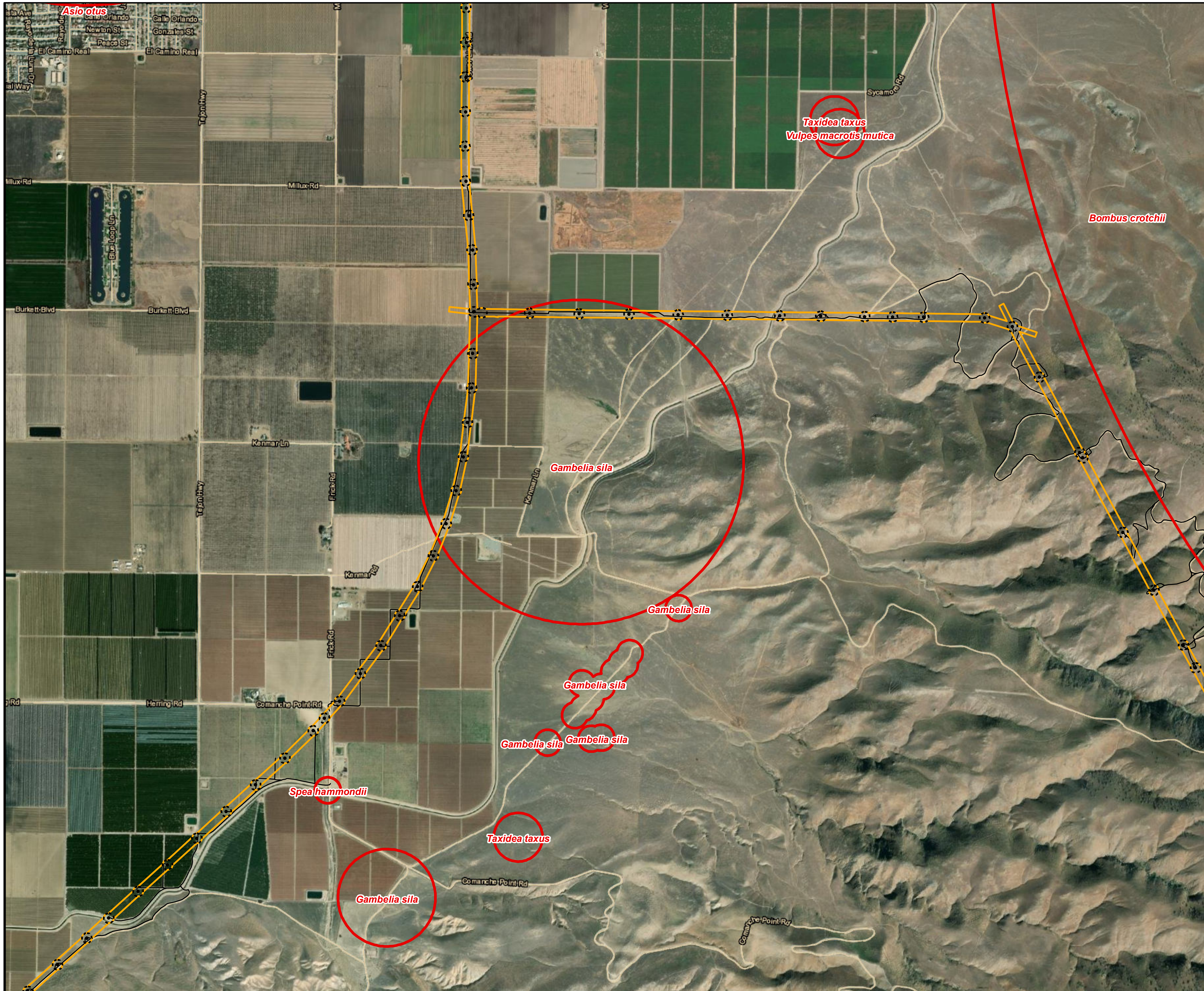
**GORMAN-KERN RIVER 66 kV PROJECT CNDDB WILDLIFE**

ARCADIS

FIGURESET

5.4-5

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-5_CNDDB_Wildlife.mxd 1/27/2022



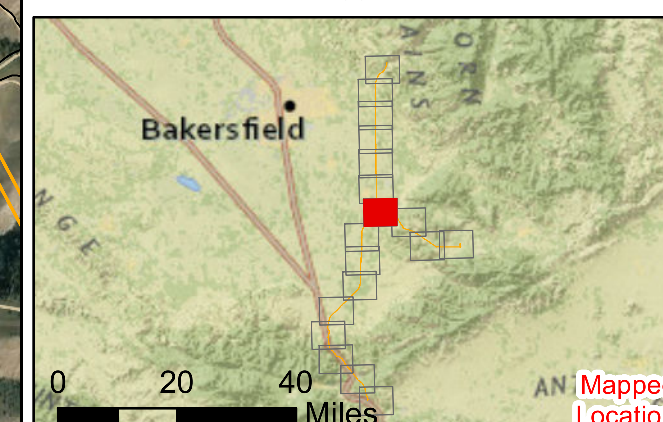

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT CNDDB WILDLIFE**

ARCADIS

FIGURESET
**5.4-5**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-5_CNDDB_Wildlife.mxd 1/27/2022

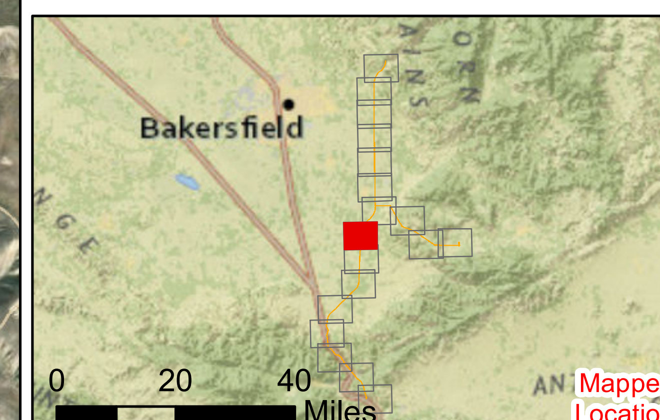

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT CNDDB WILDLIFE**

ARCADIS

FIGURESET
5.4-5

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-5_CNDDB_Wildlife.mxd 1/27/2022

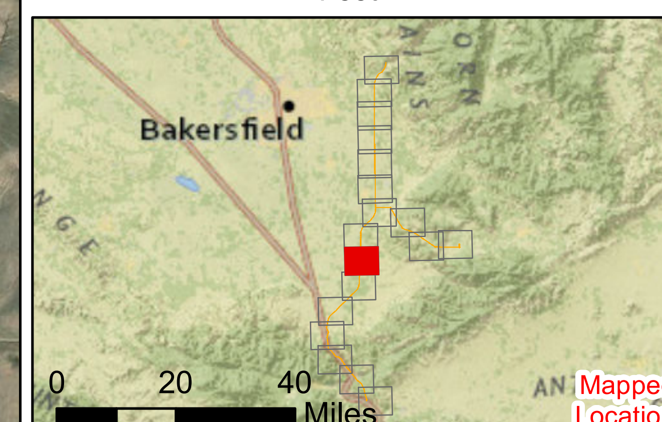

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT CNDDB WILDLIFE**

ARCADIS

FIGURESET
5.4-5

\\corparcgis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-5_CNDDB_Wildlife.mxd 1/27/2022

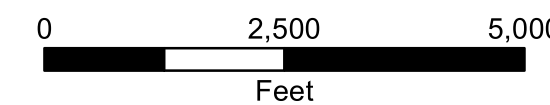

SOUTHERN CALIFORNIA EDISON

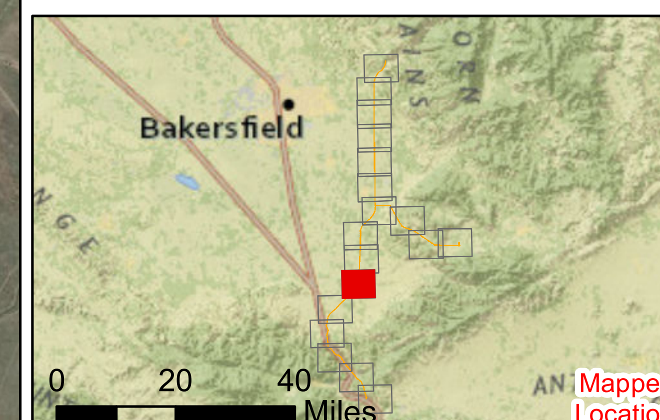
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT CNDDB WILDLIFE**

ARCADIS

**FIGURESET**

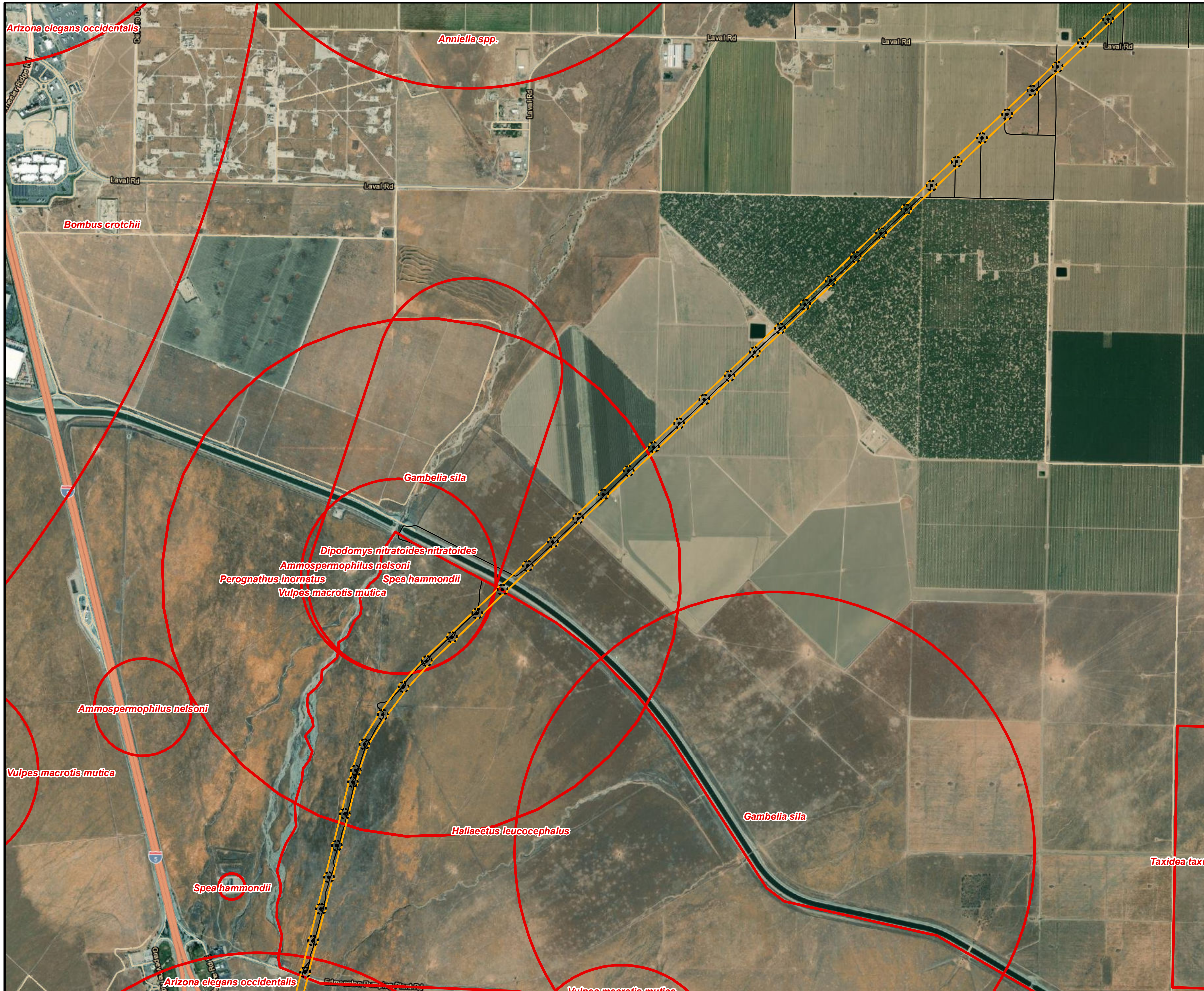
**5.4-5**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-5_CNDDB_Wildlife.mxd 1/27/2022

SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

N

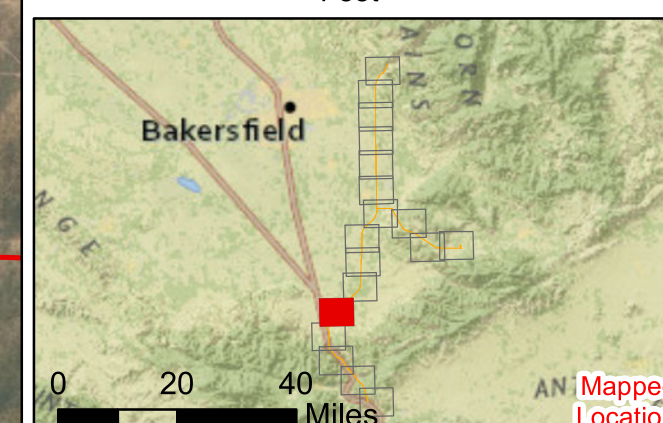



LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000

Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

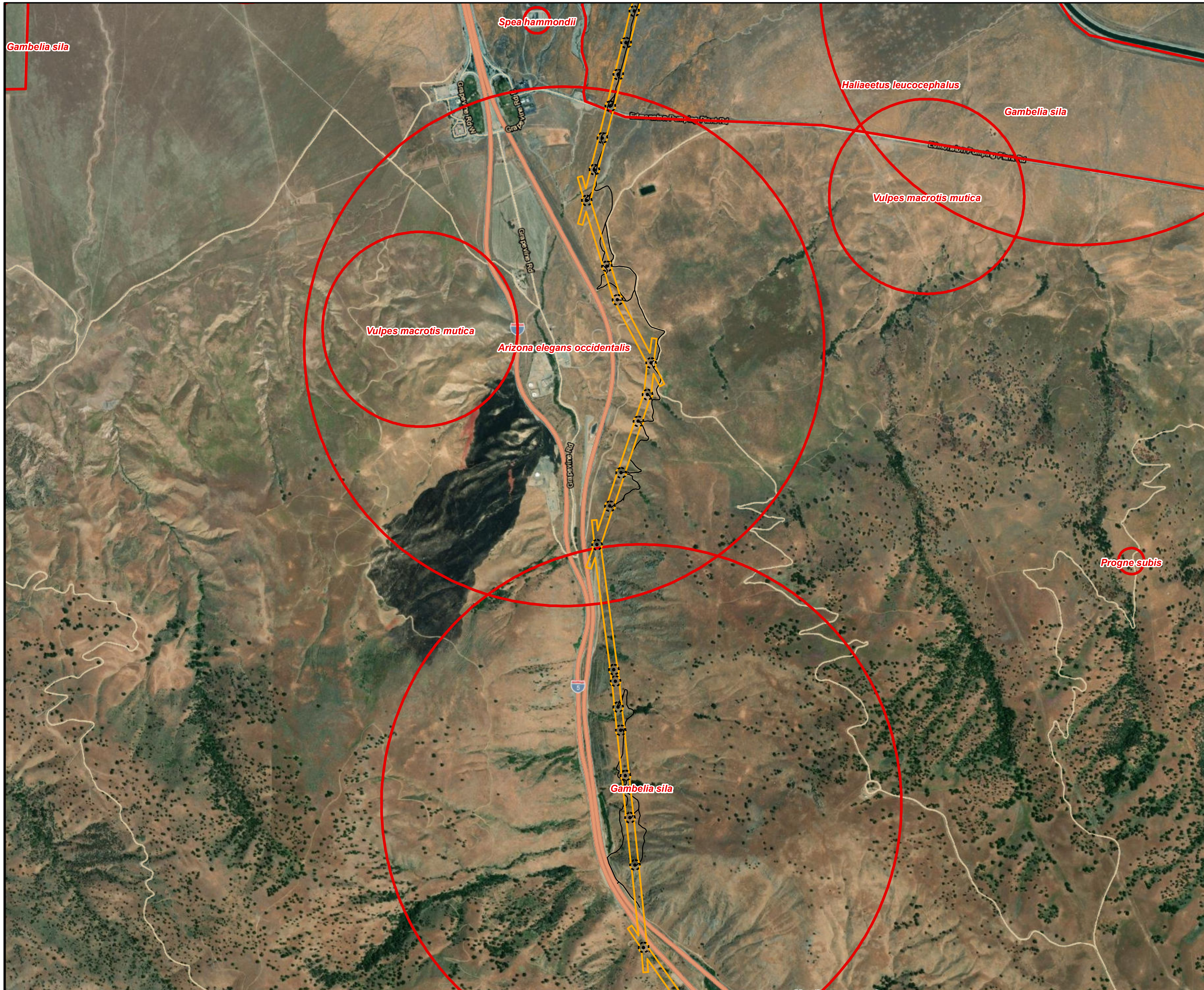
**GORMAN-KERN RIVER 66 kV PROJECT CNDDB WILDLIFE**

ARCADIS

FIGURESET

5.4-5

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-5_CNDDB_Wildlife.mxd 1/27/2022



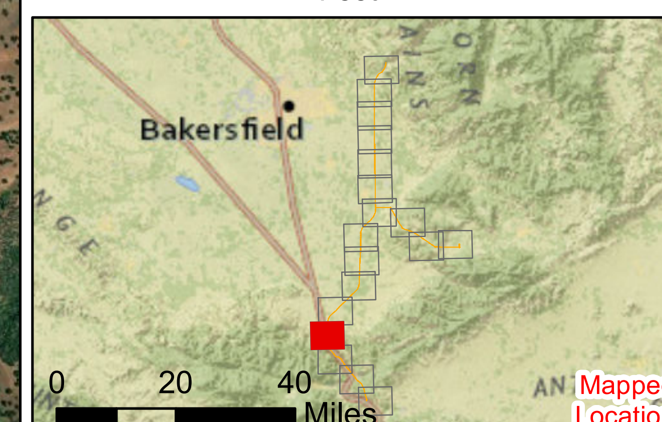

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000
Feet



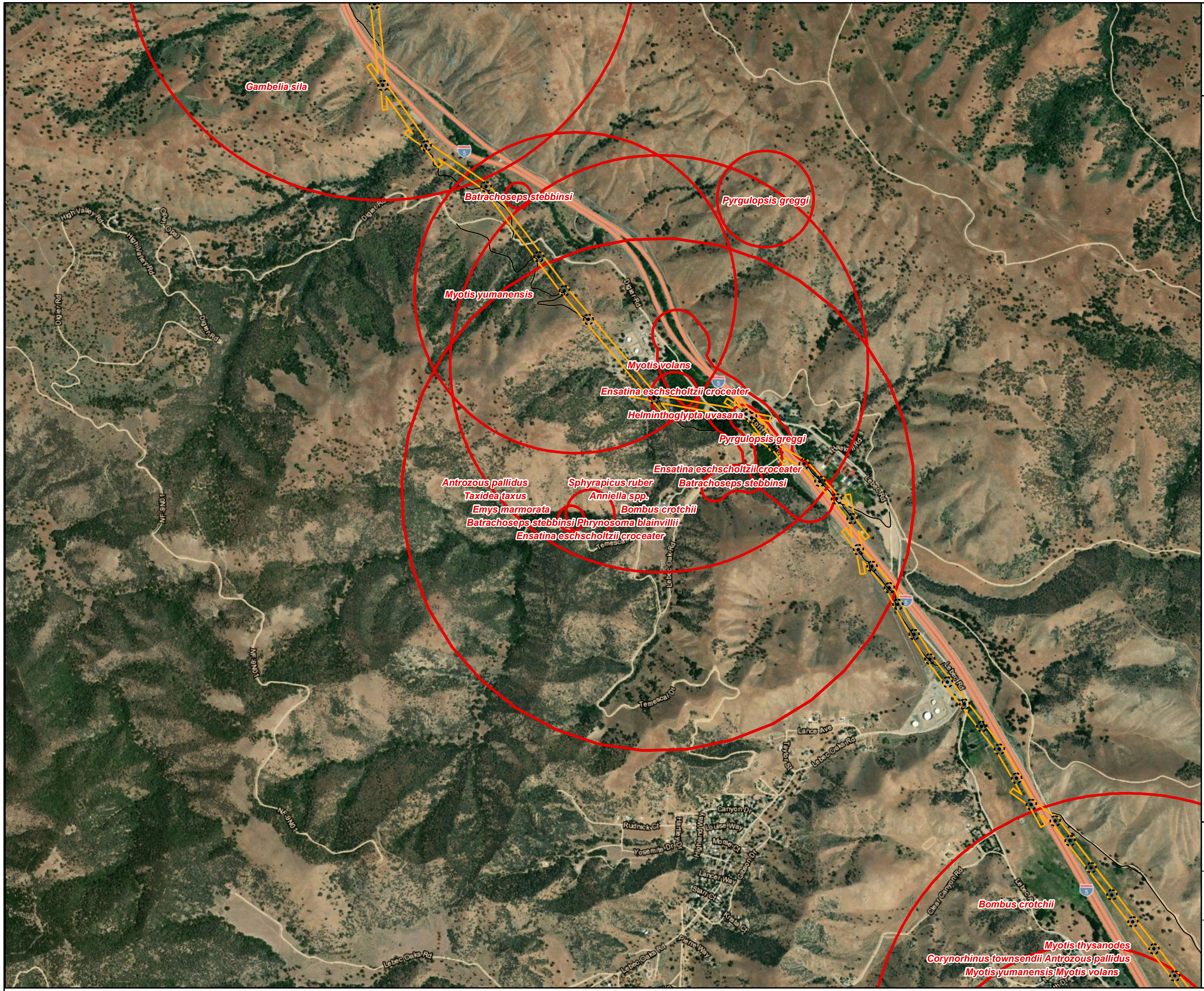

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT CNDDB WILDLIFE**

ARCADIS

**FIGURESET 5.4-5**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-5_CNDDB_Wildlife.mxd 1/27/2022



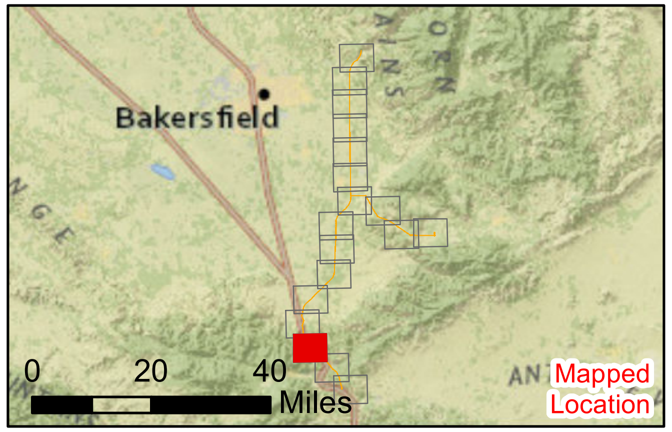

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000
Feet



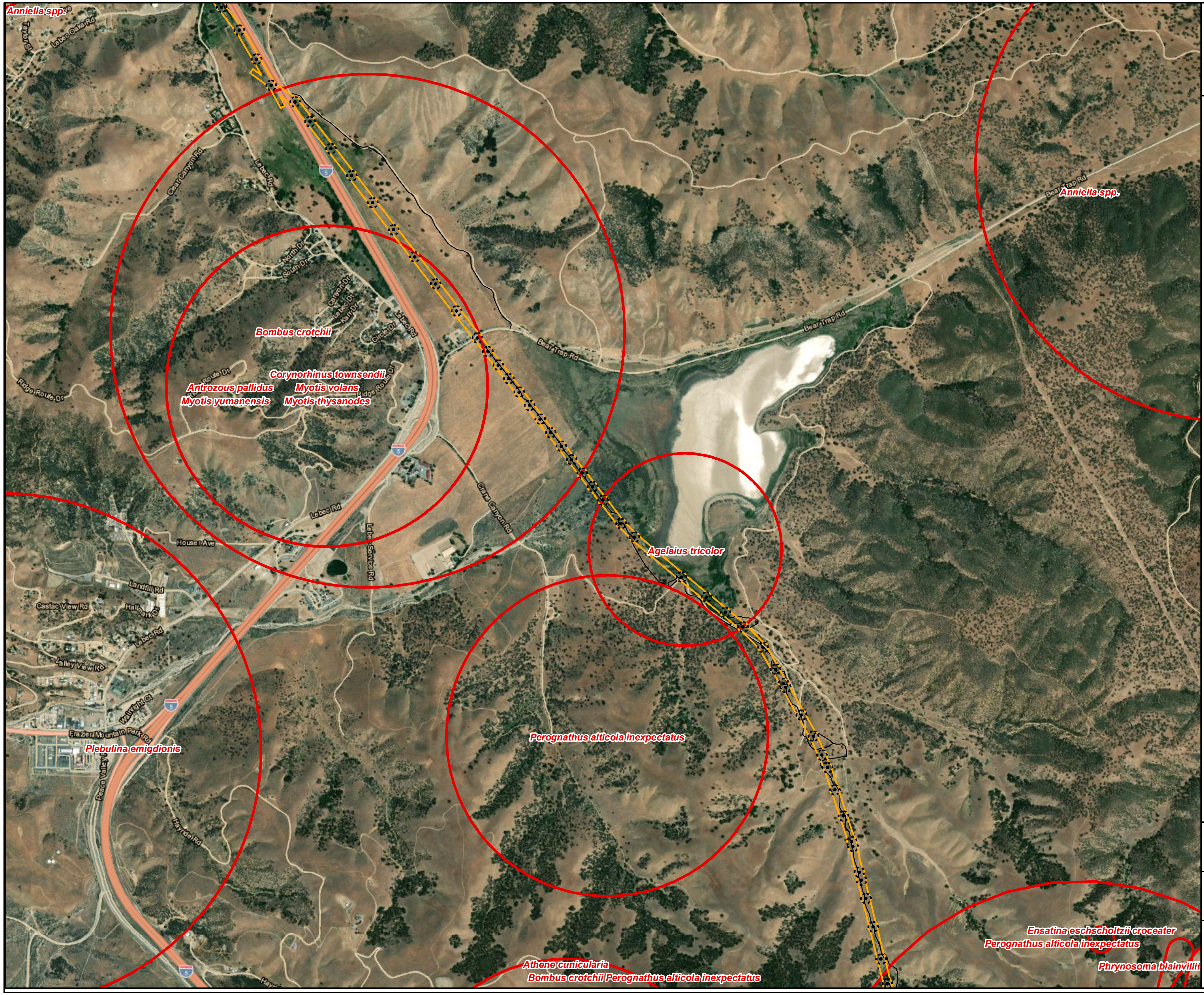

TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT CNDDB WILDLIFE**

ARCADIS

FIGURESET 5.4-5

\\corparcgis\Data\ArcGisData\GIS\PROJECTS_ENV T-_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-5_CNDDB_Wildlife.mxd 1/27/2022



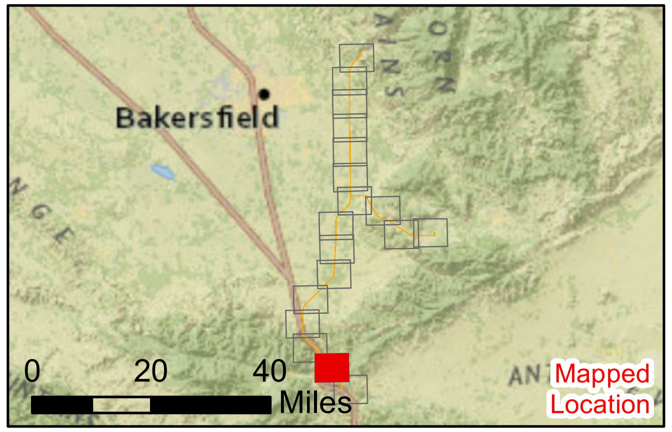

N

**LEGEND**

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000

Feet




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

TRANSMISSION LINE RATING REMEDIATION PROJECT

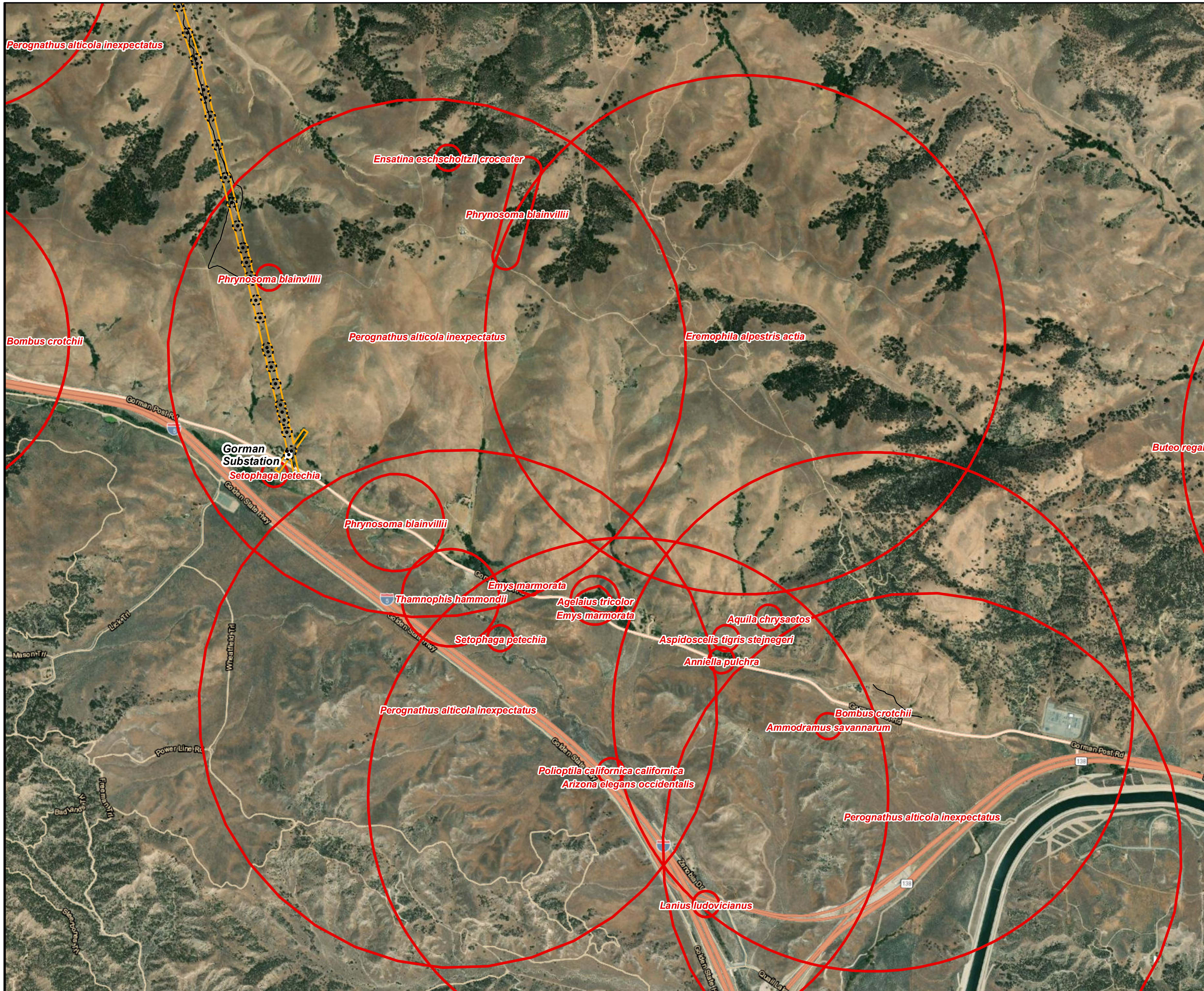
**GORMAN-KERN RIVER 66 kV PROJECT CNDDB WILDLIFE**

ARCADIS

**FIGURESET**

**5.4-5**

\\corparcgis\Data\ArcGis\Data\GIS\PROJECTS_ENV T\1_ENV\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-5_CNDDB_Wildlife.mxd 1/27/2022




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- SUBSTATION LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000

Feet

TRANSMISSION LINE RATING REMEDIATION PROJECT

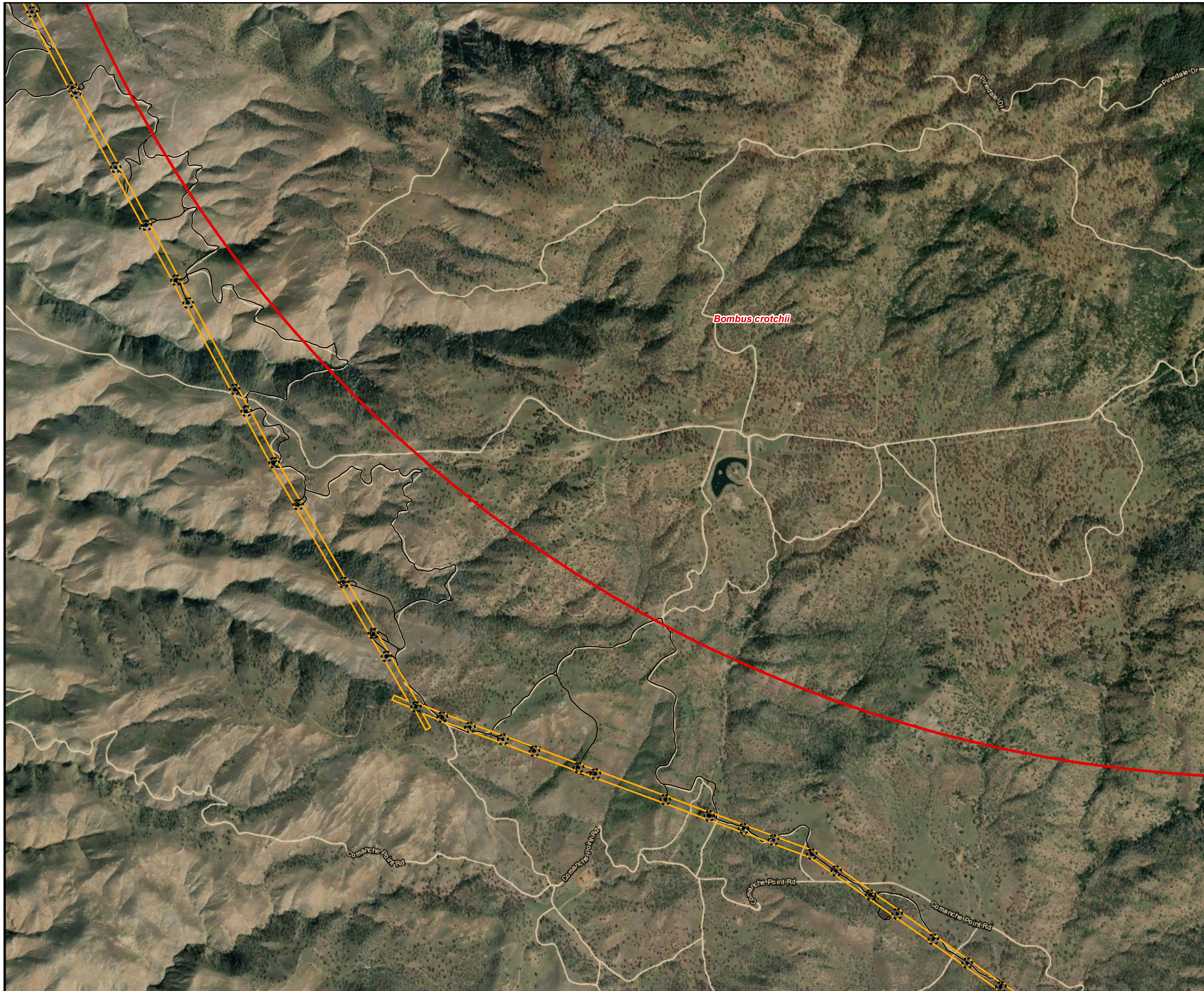
**GORMAN-KERN RIVER 66 kV PROJECT CNDDB WILDLIFE**

ARCADIS

FIGURESET

5.4-5

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-5_CNDDB_Wildlife.mxd 1/27/2022



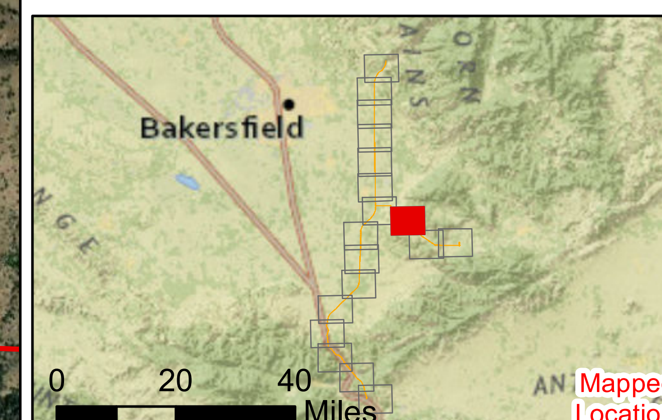

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

STRUCTURE LOCATION
ACCESS ROADS
100 FOOT RADIUS TOWER BUFFER
SURVEY AREA
CNDDB OCCURRENCES

0 2,500 5,000
Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT CNDDB WILDLIFE**

ARCADIS

**FIGURESET**
**5.4-5**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-5_CNDDB_Wildlife.mxd 1/27/2022

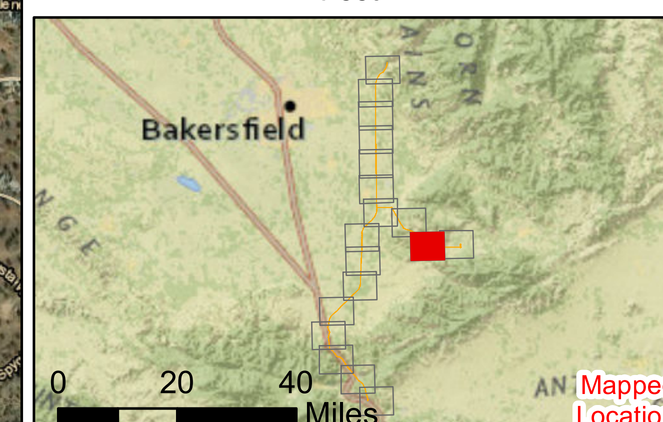

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company

N

LEGEND

- STRUCTURE LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA

0 2,500 5,000
Feet

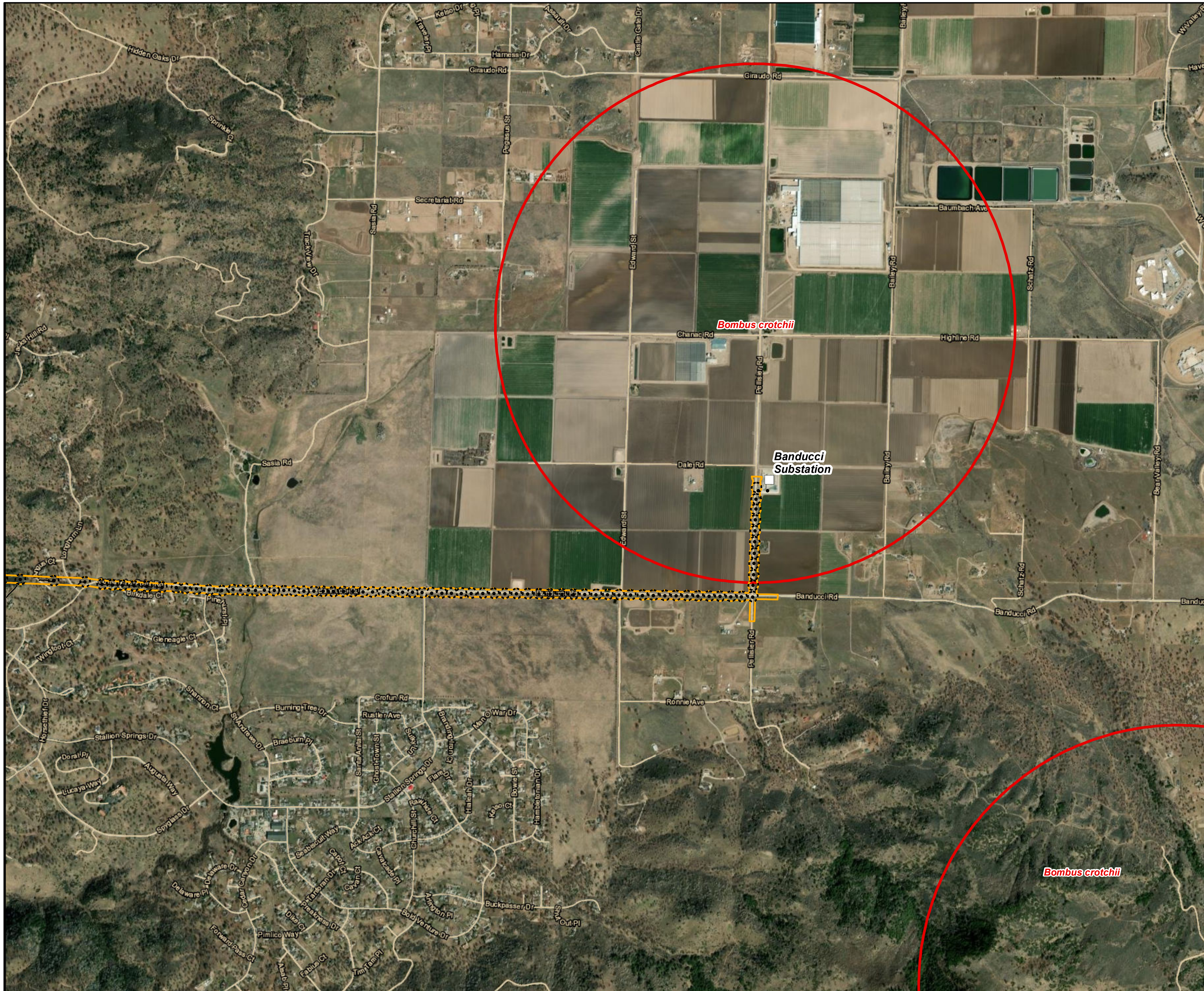



TRANSMISSION LINE RATING REMEDIATION PROJECT

**GORMAN-KERN RIVER 66 kV PROJECT CNDDB WILDLIFE**

ARCADIS

FIGURESET
**5.4-5**




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

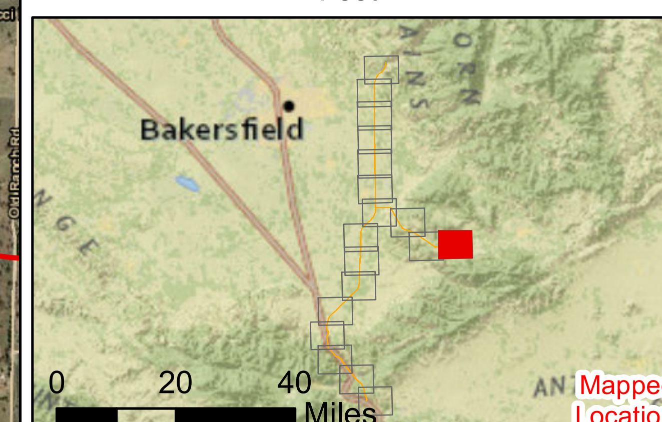
N

LEGEND

- STRUCTURE LOCATION
- SUBSTATION LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDB OCCURRENCES

0 2,500 5,000

Feet




TRANSMISSION LINE RATING REMEDIATION PROJECT

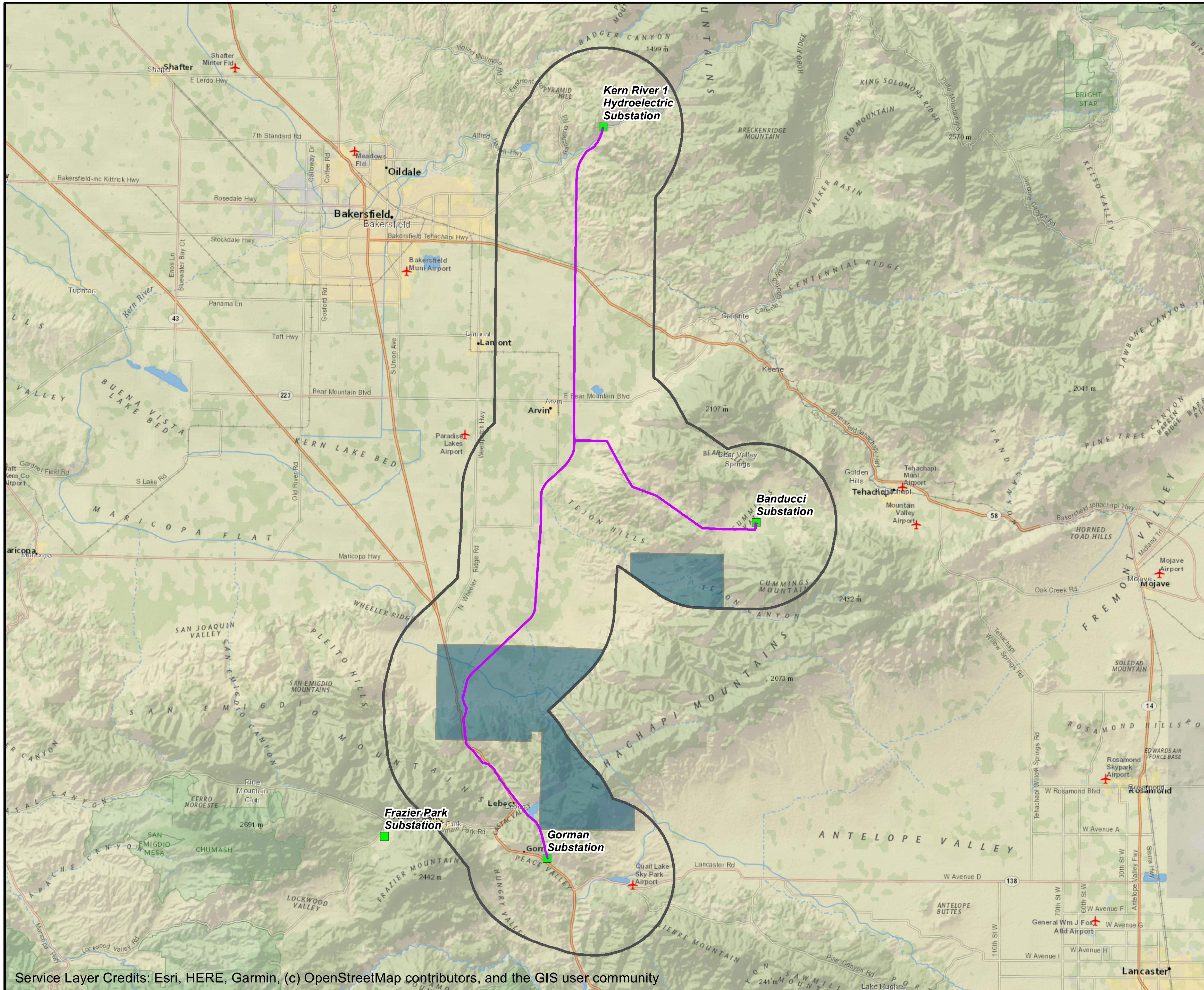
**GORMAN-KERN RIVER 66 kV PROJECT CNDDB WILDLIFE**

ARCADIS

**FIGURESET 5.4-5**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-5_CNDDB_Wildlife.mxd 1/27/2022

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company




Legend:

- Kern River Alignment
- California condor Critical Habitat
- 5 mile radius
- Substations

NOTES:
1) Critical Habitat data source:
US Fish and Wildlife Service Environmental Conservation Online System (ECOS)
*https://ecos.fws.gov/ecp/*.

0 8 16
Miles

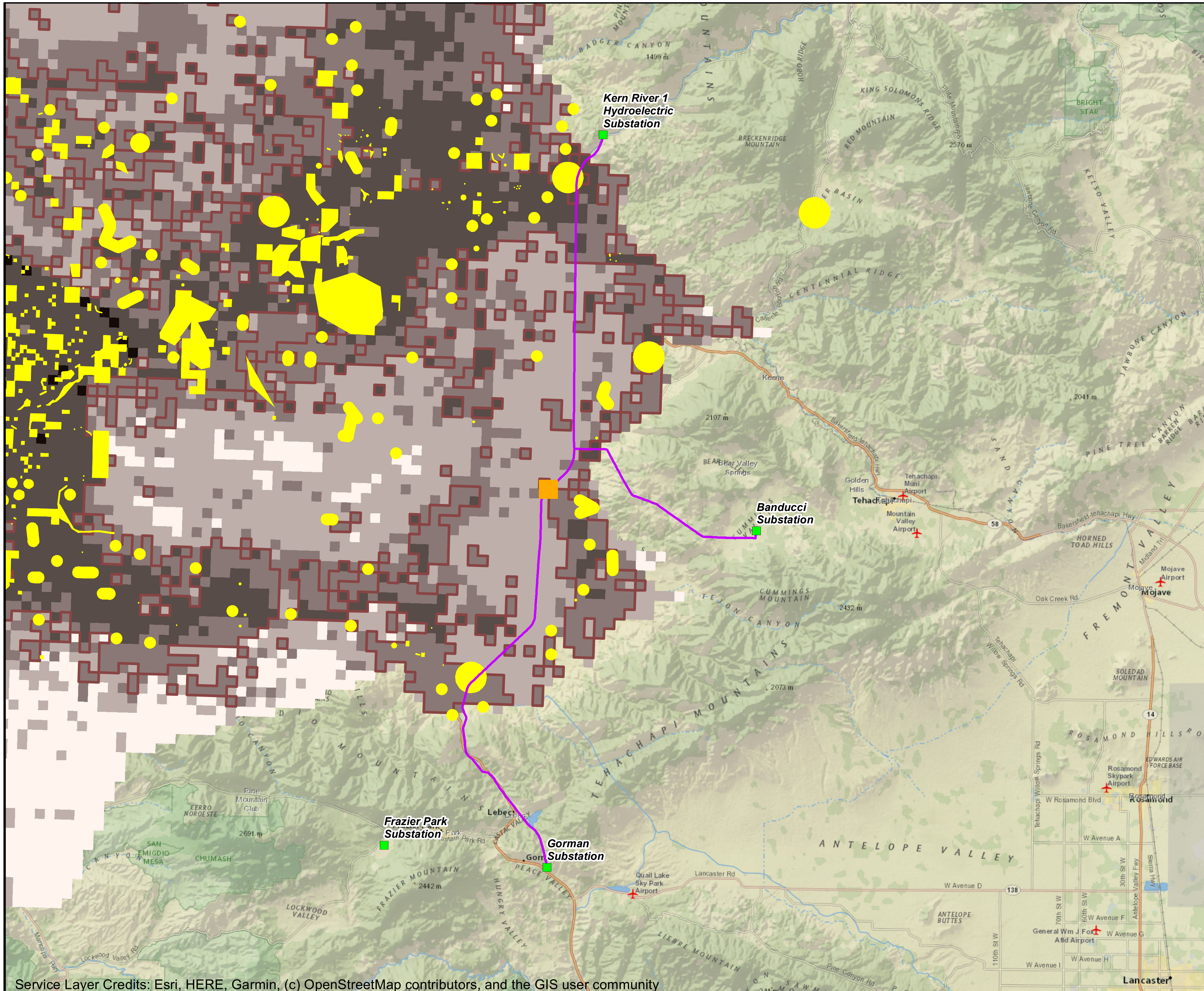
Transmission Line Rating Remediation Project

**GORMAN-KERN RIVER 66 kV PROJECT CRITICAL HABITAT**

ARCADIS

FIGURE **5.4-6**

\\ccorpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-6_Critical_Habitat.mxd 06/14/2021




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

Legend:

- Substation
- Kern River Alignment
- California Natural Diversity Database (CNDDB) Record
- Active Burrow (Found during survey)
- Predicted Occupied Habitat

**Probability of Occurrence**

- 0 - 0.2
- 0.2 - 0.4
- 0.4 - 0.6
- 0.6 - 0.8
- 0.8 - 1.0

NOTES:

1) CNDDB polygons represent records for San Joaquin Kit Fox (*Vulpes macrotis mutica*)

2) Predicted Occupied Habitat and Probability of Occurrence based on USGS models (*https://databasin.org/*)

0 8 16
Miles

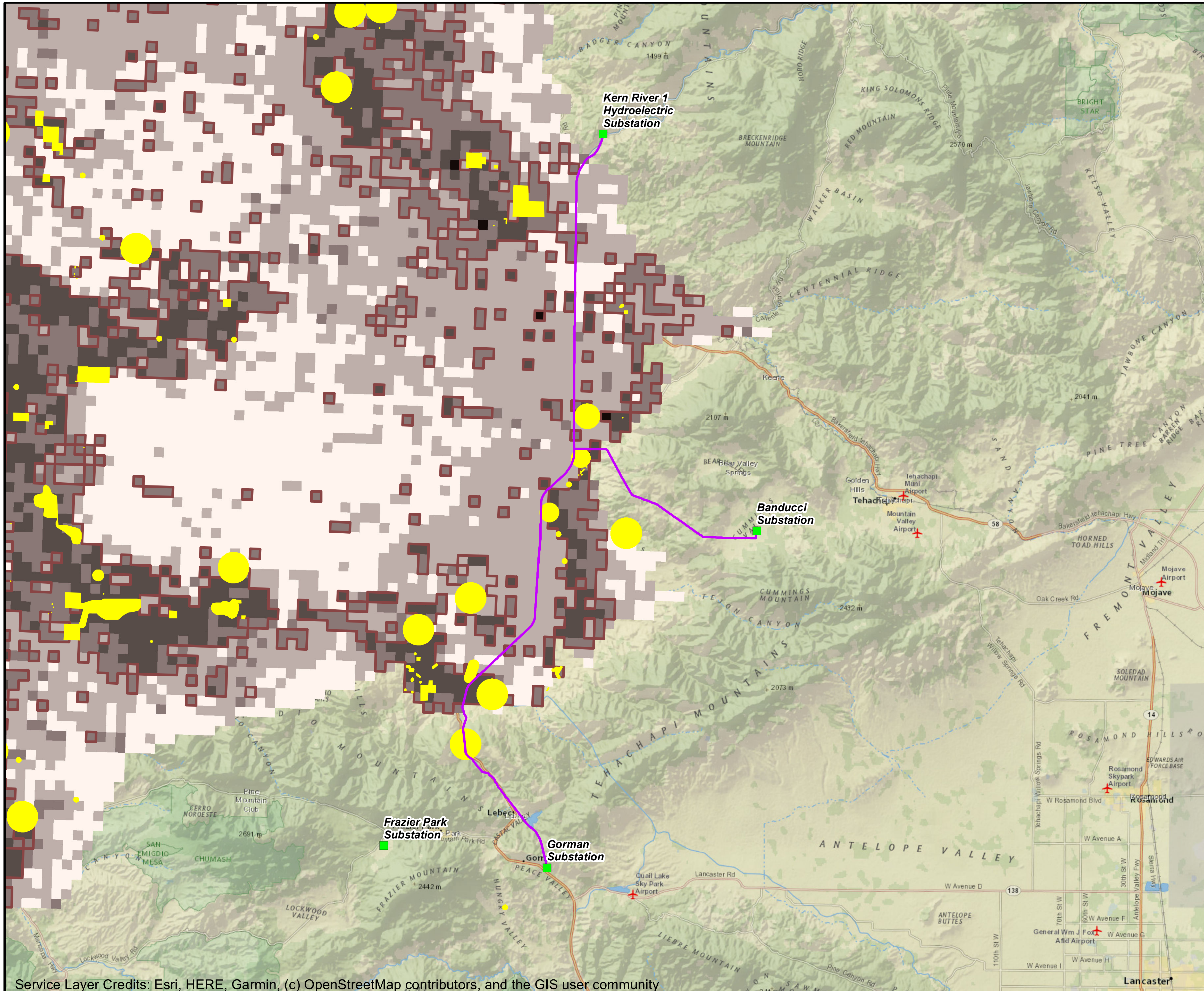
Transmission Line Rating Remediation Project

**GORMAN-KERN RIVER 66 kV PROJECT**
**SAN JOAQUIN KIT FOX**

ARCADIS

**Figure**
**5.4-7**

\\corpcargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-7_San Joaquin Kit Fox.mxd 06/30/2021






SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

N

Legend:

- Substation
- Kern River
- California Natural Diversity Database (CNDDB)
- Predicted Occupied Habitat

**Probability of Occurrence**

- 0 - 0.2
- 0.2 - 0.4
- 0.4 - 0.6
- 0.6 - 0.8
- 0.8 - 1.0

NOTES:

1) CNDDB polygons represent records for Blunt-nosed Leopard Lizard (*Gambelia sila*)

2) Predicted Occupied Habitat and Probability of Occurrence based on USGS models (*https://databasin.org/*)

0 8 16

Miles

Transmission Line Rating Remediation Project

**GORMAN-KERN RIVER 66 kV PROJECT BLUNT-NOSED LEOPARD LIZARD**

ARCADIS

**FIGURE 5.4-8**

\\corpargis\Data\ArcGisData\GISPROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-4-8_Blunt-nosed Leopard Lizard.mxd 06/14/2021

## 5.5 Cultural Resources

This Section of the PEA identifies cultural resources along the GKR Project alignment, identifies applicable significance thresholds, and assesses the GKR Project's potential impacts to these resources and their significance.

Cultural resources are defined as any object or specific location of past human activity, occupation, or use that is identifiable through historical documentation, inventory, or oral evidence. Cultural resources can be separated into three categories: archaeological, building/structural, and traditional resources. Archaeological resources include prehistoric and historic remains of human activity. Prehistoric resources can be composed of lithic scatters, ceramic scatters, quarries, habitation sites, temporary camps/rock rings, ceremonial sites, and trails. Historic-era resources are typically those that are 50 years or older. Historic archaeological resources can consist of structural remains (e.g., concrete foundations), historic objects (e.g., bottles and cans), features (e.g., refuse deposits or scatters), and sites (e.g., resources that contain one or more of the aforementioned categories). Built environment resources range from historic buildings to canals, historic roads and trails, bridges, ditches, cemeteries, and electrical infrastructure, such as transmission lines, substations, and generating facilities. A traditional cultural resource is a resource associated with the cultural practices, traditions, beliefs, lifeways, arts, crafts, or social institutions of a living community. They are rooted in a traditional community's history and are important in maintaining the continuing cultural identity of the community. See Section 5.18, Tribal Cultural Resources, for a discussion of cultural resources of potential importance to California Native American tribes.

### 5.5.1 Environmental Setting

The Project area of potential effect (APE)/area of potential impact (API) is situated along approximately 65.3 miles (105.1 km) of existing subtransmission lines starting at the Kern River Powerhouse No. 1 in SNF and extending into Kern and Los Angeles counties.

Project elevations range from approximately 930 feet (283 meters[m]) above mean sea level (AMSL) near Kern River Powerhouse No. 1 to approximately 3,790 feet (1,155 m) above mean sea level (amsl) near Banducci Substation. See below and Chapter 3 for project description and location.

#### *5.5.1.1 Area of Potential Effect/Area of Potential Impact*

The APE/API is defined as a 300-foot survey corridor encompasses 2,395 acres, which was calculated by using ArcGIS software to buffer the existing subtransmission alignment centerline by 150 feet (45.7 m); resulting in a 300-foot (91.4-m) wide corridor.

#### *5.5.1.2 Cultural Resource Reports*

The Project Cultural Resources Survey Report and the Historic-Era Built Environment Report (HBER) are provided under separate cover.

#### *5.5.1.3 Cultural Resources Summary*

##### 5.5.1.3.1 Physical Setting

The Project area spans five geographical ecoregions of California with distinct environmental settings: Sierra Nevada, Central California Foothills and Coastal Mountains, Central California Valley, Southern California Mountains, and Mojave Basin and Range. The GKR Project is divided into five segments (1 through 5), which are discussed below.

##### *5.5.1.3.1.1 Segment 1*

The existing Kern River Powerhouse No. 1 (co-located with the existing Kern River 1 Hydroelectric Substation) defines the northern terminus of Segment 1 of the GKR Project; it is located approximately 13 miles east-northeast of the City of Bakersfield along California State Route 178 (SR 178) in the Kern River canyon. From the Kern River Powerhouse No. 1, Segment 1 of the GKR Project alignment runs southwest for approximately 20.4 miles to and including Structure M20-T3 (a location referred to as "the T"), approximately 2.5 miles southeast of the City of Arvin. Segment 1 is located in unincorporated Kern County and the City of Bakersfield and includes the Gorman-Kern River 66 kV circuit and the Banducci-Kern River 1 66 kV circuit. This portion of the APE/API lies within the Central California Foothills and Coastal Mountain and the Central California Valley ecoregions.

The Central California Foothills and Coastal Mountains ecoregion has as its primary distinguishing characteristic a Mediterranean climate of hot dry summers and cool moist winters, along with associated vegetative cover comprising primarily chaparral and oak woodlands (Griffith et al. 2016). Most of this region consists of open low mountains or foothills, where large areas are ranchland and valleys with agricultural activities. The northern portion of Segment 1 is located within the Tehachapi Foothills of this region. This region consists of moderately steep to steep mountains and hills on mostly granitic terrain and covers the lower slopes around the southern end of the Greenhorn Mountains and on the western sides of Breckenridge Mountain and the Tehachapi Mountains (Griffith et al. 2016). Vegetation noted in this ecoregion includes blue oak, needlegrass and annual grasslands, chamise, ceanothus, mixed oaks, and foothill pine.

The Central California Valley ecoregion is characterized by flat, intensively farmed plains with long, hot, dry summers and mild winters. This ecoregion includes the flat valley basins of deep sediments adjacent to the Sacramento and San Joaquin rivers, as well as the fans and terraces around the edge of the valley (Griffith et al. 2016). The majority of Segment 1 is located within the Kern Terraces and South Valley Alluvium ecoregions. The Kern Terraces ecoregion consists of gently sloping terraces, dissected alluvial fans, and mostly small floodplains at the southeastern edge of the San Joaquin Valley (Griffith et al. 2016). Common vegetation includes perennial and annual grasslands, with scattered areas of allscale scrublands, and a few small areas of blue oak savanna, especially near the transition to the Tehachapi Foothills ecoregion, with beavertail cactus as one of the indicators of desert influence in the area (Griffith et al. 2016). The South Valley Alluvium ecoregion is nearly level to gently sloping alluvial fans in the southern San Joaquin Valley. Vegetation includes perennial bunchgrasses and annual grasslands, allscale scrub, mesquite dune lands, and some iodine bush with the dominant land uses of the area being cropland, pasture/grassland, and urban development (Griffith et al 2016). Oil fields occur within both ecoregions, especially the South Valley Alluvium ecoregion.

##### *5.5.1.3.1.2 Segment 2*

Structure M20-T4, which is the structure immediately south of "the T," defines the northern terminus of Segment 2. From this structure, Segment 2 of the proposed GKR Project alignment runs south for approximately 26.5 miles to and including Structure M46-T5, which is located on Bear Trap Road approximately 0.20 miles east of Interstate 5 near the community of Lebec. Segment 2 is located in unincorporated Kern County and includes the Gorman-Kern River 66 kV circuit. This portion of the APE/API lies within the Central California Valley, the Central California Foothills and Coastal Mountain, the Sierra Nevada, and the Southern California Mountains ecoregions.

The majority of Segment 2 is located with the South Valley Alluvium ecoregion of the Central California Valley ecoregion. The South Valley Alluvium ecoregion encompasses nearly level to gently sloping alluvial fans in the southern San Joaquin Valley. Vegetation includes perennial bunchgrasses and annual grasslands, allscale scrub, mesquite dune lands, and some iodine bush with the dominant land uses in the area being cropland, pasture/grassland, and urban development (Griffith et al 2016). Oil fields occur within this ecoregion.

A small portion of Segment 2 is located within the Grapevine Transition ecoregion of the Central California Foothills and Coastal Mountains ecoregion. The Grapevine Transition ecoregion is an intermediate region between the Southern California Mountains and Central California Valley that consists of moderately steep to steep hills, dissected terraces, and some areas of sloping alluvial fans toward the valley (Griffith et al. 2016). The hills are mostly Miocene and Pliocene sandstone and conglomerate and vegetation includes allscale and needlegrass, with a few blue oaks or valley oaks (Griffith et al. 2016).

The Sierra Nevada ecoregion is a mountainous, deeply dissected, and westerly tilting fault block. The central and southern part of the region is largely composed of granitic rocks that are lithologically distinct from the mixed geology of the Klamath Mountains/California High North Coast Range to the west and the volcanic rocks of the Cascades to the north (Griffith et al. 2016). Most of the range is located above the timberline, including Mount Whitney's summit, which is the highest point in the contiguous United States at nearly 14,500 feet. The majority of the ecoregion is publicly owned federal land and includes several national forests and parks. A southern portion of Segment 2 is located within the Tehachapi Mountains ecoregion, which forms a connecting highland link from the core of the Sierra Nevada to the Transverse and Coast Ranges. While the topography and geology is similar to other portions of the Sierra Nevada, the Tehachapi Mountains have diverse vegetation which reflects its biogeographic crossroads position and the influences from the Sierra, desert, oak woodlands, and grasslands that surround it. The vegetation includes large areas of oak savanna (with blue oak, gray pine, and some valley oak) that are intermixed with junipers, yuccas, and other species from adjacent ecoregions, and steep canyons and slopes contain canyon live oak and interior live oak, as well as chamise, ceanothus, and single-leaf pinyon (Griffith et al. 2016).

The Southern California Mountains ecoregion is part of the Transverse Range and has a Mediterranean climate of hot dry summers and moist cool winters. Although Mediterranean types of vegetation such as chaparral and oak woodlands predominate in this region, elevations are considerably higher, summers are slightly cooler, and precipitation is greater, resulting in denser vegetation and some large areas of coniferous woodlands (Griffith et al. 2016). The southernmost portion of Segment 2 is located within the Northern Transverse Range of this ecoregion. The Northern Transverse Range is a dry, montane ecoregion with elevations ranging from about 3,000 to nearly 7,000 feet (Griffith et al. 2016). The geology of this region includes areas of sandstone and conglomerate, with some granitic and gneissic rocks to the east (Griffith et al. 2016). The area also has diverse vegetation communities throughout, including desert scrub, annual grasslands, semi-desert montane chaparral, Tucker oak shrubland, blue oak woodlands, and pinyon-juniper woodlands (Griffith et al. 2016).

##### *5.5.1.3.1.3 Segment 3*

Structure M46-T6 defines the northern terminus of Segment 3. From this structure, Segment 3 of the GKR Project alignment runs south for approximately 4.1 miles to Gorman Substation, which is located approximately 1.3 miles east of the community of Gorman along Gorman Post Road. Segment 3 is located in unincorporated Kern County and unincorporated Los Angeles County and includes the Gorman-Kern River 66 kV circuit and the Frazier Park-Gorman 66 kV circuit. This portion of the APE/API lies within the within the Southern California Mountains ecoregion, specifically within the Northern Transverse Range of this ecoregion (see previous discussions for details).

##### *5.5.1.3.1.4 Segment 4*

Structure M0-T1 (the structure immediately east of “the T”) defines the western terminus of Segment 4. From this structure, Segment 4 of the GKR Project alignment runs east-southeast for approximately 11.3 miles to and including Structure M11-T3, which is located adjacent to Banducci Road near the community of Stallion Springs. Segment 4 is located in unincorporated Kern County and includes the Banducci-Kern River 1 66 kV circuit. This portion of the APE/API lies within the Central California Valley and Central California Foothills and Coastal Mountains ecoregions. Specifically, the westernmost portion of Segment 4 is located with the South Valley Alluvium ecoregion of the Central California Valley ecoregion, whereas the remainder of the segment is located within the Tehachapi Foothills ecoregion of the Central California Foothills and Coastal Mountains ecoregions (see previous discussions for details).

##### *5.5.1.3.1.5 Segment 5*

Pole X7666E defines the western terminus of Segment 5. From this structure, Segment 5 of the GKR Project alignment runs east for approximately 3 miles to the Banducci Substation, which is located in the 24000 block of Pellisier Road. Segment 5 is located in unincorporated Kern County and includes the Banducci-Kern River 1 66 kV circuit. This portion of the APE/API lies within the Central California Foothills and Coastal Mountains and Sierra Nevada ecoregions. Specifically, the western portion of Segment 5 is located within the Tehachapi Foothills ecoregion of the Central California Foothills and Coastal Mountains ecoregion, whereas the remainder of the segment is located within the Tehachapi Mountains of the Sierra Nevada ecoregion (see previous discussions for details).

#### 5.5.1.3.2 Prehistoric Background

Previously-recorded archaeological sites within the region span thousands of years, ranging from 12,000 years ago to modern history. It must be noted that a variety of problems have impeded a complete archaeological record, which include but are not limited to destruction of archaeological sites, biases via natural processes of landscape evolution, and incomplete synthesis of cultural resource reports that have been generated in recent years for compliance with state and federal historic preservation laws (Riddell 2002; Rosenthal et al 2007; Garfinkel 2015). Currently, research conducted within the Southern San Joaquin Valley (SSJV) has resulted in the identification and definition of several temporal components, periods, or phases that reflect prehistoric human lifeways and land use patterns from the Pleistocene to the modern era. The following chronology for the SSJV builds on the chronological framework presented by Moratto (1984), which is found within Jones and Klar’s compilation *California Prehistory: Colonization, Culture, and Complexity* (2007).

##### *5.5.1.3.2.1 Overview of South San Joaquin Valley Cultural Area*

The SSJV archaeology is generally divided into five chronological periods, each with regional nuances in terms of date and artifact assemblage: Paleo-Indian; Lower, Middle and Upper Archaic; and Emergent (Moratto 1984; Rosenthal et al. 2007). The regional prehistoric cultural chronology is summarized in Table 5.5-1.

**Table 5.5-1. Prehistoric Cultural Chronology**

| Period | Key Characteristics | Date Range (cal B.C./cal A.D.) |
|---|---|---|
| Paleo-Indian | Basally thinned and fluted projectile points. Focus on hunter-gather subsistence strategies | 11550 to 8550 cal B.C. |
| Lower Archaic | Significant environmental changes noted; stemmed series projectile points; distinctive, formalized, flaked stone tools. Focus still on hunter-gather subsistence strategies with more diversity noted. | 8550 to 5550 cal B.C. |
| Middle Archaic | Shift to drier/warmer environmental conditions. Broader subsistence strategies and evidence of trade increase. Extended burial posture tradition observed. | 5550 to 550 cal B.C. |
| Upper Archaic | Shift to cooler climate conditions. Continued diversification of subsistence strategies; evidence of more sedentary lifestyle emerges. Temporally diagnostic forms of beads and ornaments manufactured from *Haliotis* and *Olivella* shell part of the artifact assemblage. | 550 cal. B.C. to cal A.D. 1100 |
| Emergent | Start of intensification of plant resources and reduction of hunting strategies; bow and arrow replace the atlatl and dart. Ethnographically documented cultural traditions identifiable within artifact assemblage. Burial posture is tightly flexed on the side or supine with a moderate amount of associated mortuary related offerings. | cal A.D. 1100 to contact |

*5.5.1.3.2.2 Paleo-Indian*

There is limited evidence of human habitation within the SSJV that dates to this chronological period; however, this paucity of resources is not necessarily based on lack of presence, but is partly due to geoarchaeological episodes of erosion and deposition that have destroyed or buried ancient Holocene deposits (Sutton et al. 2016). Most of the archaeological evidence for early occupation in the region is based on isolated surface finds of basally thinned and fluted projectile points, which are primarily located in the southern portion of the basin (Rosenthal et al 2007). Fluted points are commonly assigned to the Big Game Hunting Tradition of the Paleo-Indian period, which is associated with a subsistence focus on large game animals (megafauna) that were still present in the area during this early time period. Approximately 500 fluted points have been found at more than 40 locations in California, mostly concentrated along the shoreline of Tulare Lake and at Borax Lake (Moratto 1984; Price 2002). Currently, three localities in SSJV have produced early fluted points: Tracy Lake, the Woolfsen mound (CA-MER-215), and the Witt site (CA-KIN-32) along the shore of Tulare Lake basin (Rosenthal et al. 2007; Sutton et al. 2016).

*5.5.1.3.2.3 Lower Archaic*

Climatic changes at the end of the Pleistocene created a significantly different environment during the Lower Archaic, facilitating the natural development of alluvial fans and flood plains, which buried many archaeological deposits dating to former periods. Artifacts from this period include stemmed series points such as Lake Mojave and Silver Lake forms. Flaked stone crescents and distinctive, formalized, flaked stone tools comprise the key elements found in archaeological assemblages from this period. Examples of such remains are represented in the deeply buried sites found along the ancient shoreline of Tulare Lake (Moratto 1984; Sutton et al. 2016). The best-known site of this chronological period within SSJV is found on the southwestern shoreline of Buena Vista Lake (CA-KER-116). This site has a deeply-buried component which contained such artifacts as crescents, a carved stone atlatl spur, a stemmed projectile point fragment, and a few small flaked stone implements with radiocarbon dates ranging between 9175 and 8450 BP (Fredrickson and Grossman 1977; Hartzell 1992; Rosenthal et al. 2007; Sutton et al 2016: 19). No plant processing related artifacts were identified at CA-KER-116 or any other sites found within the valley floor, making the role of plant usage during the Lower Archaic abstruse.

###### *5.5.1.3.2.4 Middle Archaic*

The beginning of the Middle Archaic saw another shift in climate with increasingly warmer and drier conditions leading to the evaporation of the lakes within the region. Archaeological deposits associated with the early Middle Archaic are rare in the Central Valley and SSJV, with the stratigraphically deepest occupational evidence found at CA-SJO-68, dating to at least 5050 BP (Rosenthal et al. 2007). Paleobotanical studies from sites of this time period demonstrate the early use of acorn and pine nut crops. Faunal assemblages reflect intense use of marshes, grasslands, and riverine forests, including the appearance of elk, deer, pronghorn, rabbit, hare, waterfowl, a variety of fish and small rodent species. Baked clay impressions of basketry and cordage, bone awls, stone plummets, bone tubes, *Olivella biplicata* and abalone (*Haliotis* spp.) shell beads and ornaments, charmstones, gorge hooks, bone hooks and heavy-stemmed dart points have all been identified in the archaeological assemblages dating to this time period (Rosenthal et al. 2007; Sutton et al 2016). Trading is also evident, with obsidian artifacts and toolstone sourced from the eastern Sierra from Coso and Casa Diablo with obsidian from Coso dominating the obsidian assemblages (Moratto 1984; Sutton and Des Lauriers 2002; Rosenthal et al. 2007). An extended burial posture tradition has been identified throughout the San Joaquin Valley as far south as Buena Vista Lake that date from the Middle through Upper Archaic Periods (Fredrickson and Grossman 1977; Moratto 1984; Rosenthal et al 2007).

###### *5.5.1.3.2.5 Upper Archaic*

The Upper Archaic corresponds with the onset of another shift in environmental conditions towards a cooler climate in the Late Holocene. Little is known concerning the cultures of the SSJV during this period; however, year-round villages at Buena Vista Lake have been identified. Similar to the Middle Archaic, these sites exhibit a diverse array of artifacts, as well as the presence of architectural features including house floors and significant refuse deposits from both land and water subsistence activities (Sutton et al. 2016). Cultural materials include temporally diagnostic forms of beads and ornaments manufactured from *Haliotis* and *Olivella* shell. Spindle-shaped charmstones, cobble mortars, chisel-ended pestles and heavy dart points have also been identified (Bennyhoff and Fredrickson 1994; Rosenthal et al 2007; Sutton et al. 2016). Additionally, an extensive inventory of bone tools, including awls, fish spears, saws and flakers are diagnostic to this period. Burial positions shift during this time to supine semi-flexed, and mortuary artifacts are present, including bifacial obsidian blanks sourced at Coso or Casa Diablo (Moratto 1984; Rosenthal et al. 2007).

###### *5.5.1.3.2.6 Emergent Period*

The archaeological record for the Emergent period is the most well-documented. Intensification of plant resources and a decrease in hunting marks this cultural period. During this period, the bow and arrow was introduced and replaced the atlatl and dart. Numerous arrow point styles were developed, with one of the more unique style developed in the northern part of the Central Valley, the Stockton serrated point. By around 500 years ago, Panoche side-notched point (a variant of the Desert side-notched) was used in the western side of the San Joaquin Valley and Cottonwood-style arrow points utilized in the Tulare and

Buena Vista basins (Rosenthal et al 2007). Ethnographically documented cultural traditions are readily identifiable in the archaeological record. Stone beads and cylinders, clamshell disks, tubular smoking pipes, arrow-shaft straighteners, flat-bottomed mortars, cylindrical pestles and small side-notched arrow points mark the cultural inventory of typical archaeological sites from this era. Burial posture is tightly flexed on the side or supine with a moderate amount of associated mortuary-related offerings. After 900 BP and at the time of European contact, most archaic traditions and technologies disappear from the region (Rosenthal et al. 2007; Sutton et al. 2016). Protohistoric and historic-era sites contain Euroamerican trade items, such as glass beads, brass buttons, and other introduced artifacts (Moratto 1984; Bennyhoff and Fredrickson 1994; Rosenthal et al. 2007).

#### 5.5.1.3.3 Ethnographic Background

The GKR Project alignment is located within the traditional territory of five ethnographically distinct Native American groups: Yokuts, Kitanemuk, Kawaiisu, Interior/Emigdio Chumash, and Tatavium. The following is a brief ethnohistoric discussion of each group.

##### *5.5.1.3.3.1 Yokuts*

The GKR Project alignment runs parallel to the ancestral territory for Yokuts, specifically Southern Valley Yokuts (Yowlumne). The Yokuts population inhabited the San Joaquin Valley as well as the lower Sierra Nevada foothills and are usually divided into three large general groups—Northern Valley, Southern Valley, and Foothills—which were then composed of approximately sixty tribelets (Moratto 1984). Southern Valley Yokuts are stated to traditionally occupy the areas around Kern, Buena Vista, and Tulare lakes, along with some rivers that issue from the Southern Sierra Nevada mountain range (Lotta 1949; Monastero et al. 2014; Pearce et al. 2016). There are more than 40 autonomous, linguistically related tribelets, with the Yokuts languages part of the Penutian family of languages (Harvey 2011). The name *Tehachapi* is believed to be a variation on the Yokut work *Tah-hi'tch* or *Tah-heetch*, meaning "Oak Covered Valley" (Latta 1949). At time of European contact, it is believed at least 15 different Yokut groups inhabited the southern San Joaquin Valley (Kroeber 1976).

There are a few known villages of the Southern Valley Yokuts, including their central village *Woilu* that was located in downtown Bakersfield and *Wawcoye*, located on the Rio Bravo Ranch property (Latta 1949). Yokuts lived in high-ground, permanent villages and practiced a mixed subsistence strategy based on fishing, hunting, and gathering (Wallace 1978; Moratto 1984; Harvey 2011). Yokut basketry was highly developed and is characterized by coiled jar-like vessel with flat shoulder and constricted or re-flaring neck, commonly referred as "Tulare bottlenecks" (Kroeber 1976; Wallace 1978). Pottery is sporadic with some regions conducting pottery and others with limited or no information regarding pottery (Kroeber 1976). Social organization appears centered in moiety-based unilineal kin groups (Kroeber 1976). Tribal groups that surrounded the Yokuts often engaged in socialization, trade, intermarriage and conflict, with a long history of trade and interaction between Yokuts and the Kawaiisu tribe (Latta 1949; Orfila 2011; Pearce et al. 2016). Warfare appears to be infrequent, both internal and with their neighbors, with the Yokuts being described as "on the whole a peaceable people" (Kroeber 1976).

##### *5.5.1.3.3.2 Kitanemuk*

The Kitanemuk are Takic language speakers, part of the Northern Uto-Aztecan linguistic family (Blackburn and Bean 1978; Shipley 1978; Moratto 1984; Harvey 2011). The Kitanemuk population inhabited portions of the Tehachapi Mountains and the southwestern portion of the Mojave Desert/Antelope Valley by the proto-historic period with consensus suggesting the mountains were the primary occupation areas with the desert region utilized on a seasonal basis (Kroeber 1976; Blackburn and Bean 1978; Sutton 1980). It has also been suggested that the Kitanemuk occupied lower elevation canyons in the western foothills of the Tehachapi Mountains compared to the Kawaiisu, who occupied higher elevations to the northeast (Mason et al. 2001). However, settlement patterns of the pre-contact Kitanemuk are not fully understood.

Based on the known ethnographic data, it has been suggested the Kitanemuk subsistence pattern was based mostly on gathering with minimal mammal hunting and a settlement pattern made of semi-permanent villages located within the mountain region with small seasonal sites used for exploitation of specific resources (Sutton 1980). Acorn and pinyon harvest, along with seed, berry, root, and shoot collection, were central in the Kitanemuk's subsistence strategy (Underwood and Cleland 2002). Large game, primarily deer, mountain sheep, and antelope, were hunted with bow and arrow with smaller game trapped (Underwood and Cleland 2002). The Kitanemuk had a more complex social organization compared to other groups, particularly Numic speaking groups (Blackburn and Bean 1978; Mason et al. 2001). Two known villages of the Kitanemuk include *Hihi keave*, on Caliente Creek, and *Na-kwalki-ve*, located at the confluence of Chanac Creek and Tejon Creek (Kroeber 1976; Blackburn and Bean 1978; Underwood and Cleland 2002). The Kitanemuk have also been referred as "Tejon Indians," along with other native people from the Tejon Ranch area (Blackburn and Bean 1978; Harvey 2011). Known archaeological data suggest that about BP 300, the territorial base of the Kitanemuk moved from Antelope Valley to the Tehachapi Mountains for currently indeterminate reasons (Sutton 1980).

##### *5.5.1.3.3.3 Kawaiisu*

The Kawaiisu are part of the Numic-speaking branch of the Uto-Aztecan, with their population occupying the southern Sierra Nevada, south of the Kern River; the northern Tehachapi Mountains, south of the Tehachapi Pass; and portions of the western Mojave Desert (Orfila 2011). It is believed that the Kawaiisu migrated out of the Mojave Desert sometime before contact and settled within the Tehachapi Mountains while still claiming the western Mojave Desert region (Zigmond 1986; Macko et al. 1993; Sutton 1996). Higher elevations to the south of the Tehachapi Valley have been noted as a boundary between the Kawaiisu and Kitanemuk, with a system of seasonal rounds throughout the Tehachapi mountain valleys into the Antelope and San Joaquin valleys and permanent winter settlements at lower elevations (Macko et al. 1993). Winter homes made with willow poles covered with brush and mats of bark or tule, earth-covered sweat houses, and circular brush enclosures are some of the structures observed among the Kawaiisu settlements (Mason et al. 2001).

Kawaiisu culture appeared centered on the family group with no formal political groupings noted by ethnographic data, with a position of chief recognized by general acknowledgement throughout the group (Zigmond 1986). The position of chief was patrilineal, though not necessarily automatically inherited, with wealth a factor in qualification (Zigmond 1986; Mason et al. 2001). Subsistence strategies were mainly based on an annual seasonal round of the hunter and gather model with no known agricultural practices, though there is evidence of pruning of tobacco plants and burning of wild seed fields (Orfila 2011). While many plants were harvested, acorns were a major staple; most of the plants were gathered within the mountain regions with minimal desert flora collected (Zigmond 1986). Fauna hunted included deer, bighorn sheep, chuckwalla, pronghorn, and rabbits (Zigmond 1986). Interaction between other groups varied, with generally positive relations with neighboring groups like the Western Shoshone, Chumash, Kitanemuk, and the Tübatulabal (Zigmond 1986; Macko et al. 1993). It has been stated that the most prominent of the archaeological evidence for the Kawaiisu are bedrock mortars and pictographs (Zigmond 1986).

##### *5.5.1.3.3.4 Chumash*

At the time of European contact in 1542, the Chumash population inhabited an area of California that stretched from the coast to its inland extensions and the four northern Channel Islands (Bernard 2008). Eight distinct groups make up the Chumash population, with the Interior Chumash inhabiting portions of the study area south of the Southern Valley Yokuts (Hudson and Blackburn 1982). The Interior Chumash can be further divided into three groups: Emigdio, Castac, and Cuyama (Grant 1978; Harvey 2011) with the study area straddling between the Emigdio and Castac Chumash. Archaeological and historical data are sparse concerning the interior Chumash population compared to the wealth of knowledge on the coastal and island Chumash, due to few regional surveys and fewer intensive excavations documented; however, recent research is beginning to rectify this paucity of knowledge (see Bernard 2008 and Robinson 2006).

Loose affiliation between towns and villages was achieved through political ties, ritual and ceremonial practices, and extensive trade relationships (McLendon and Johnson 1999; Arnold 2001). Coastal and island groups subsisted mostly on marine resources such as fish, shellfish, and marine mammals, in addition to terrestrial flora and fauna. In comparison, inland groups' subsistence strategies were based on localized terrestrial foods while still engaging in frequent trips to the coastal region for food, trade and socialization (Arnold 2001; Bernard 2008). *Olivella sp.* beads were a highly valuable trading commodity within the Chumash region and beyond; their presence has been documented in the GKR Project area (Arnold 2001; Bernard 2008). Historical accounts characterized Chumash culture with hereditary inequality, high population density, regional village hierarchy and some religious integration (Arnold 2001; Bernard 2008). However, this form of culture is considered a later development starting within the Middle period (2600 BP to 1885 BP) to the Late period (700 BP to AD 1782) and did not crystallize until the latter period of Chumash history, forming during the time referred to as the Middle period, approximately 2600 BP to 850 BP (Arnold 2001; Bernard 2008).

Within the Project area, the known geographical groups are Emigdiano and Castac Chumash. The Castac Chumash are considered the smallest of the interior Chumash population, with known occupation around Castac Lake and the Tejon Pass up to the mouth of the Grapevine Canyon (Cañada de las Uvas) (Bernard 2008). Few historic village names are known within this region and what information is known of these villages comes after secularization of the area (Johnson 2000; Bernard 2008). The Emigdiano Chumash are believed to have occupied the mountains and north-flowing streams and drainages that extend from the San Emigdio Mountains, bordering Castac Lake on the east (Bernard 2008). There is ethnographic research that places Emigdiano Chumash villages 2.9 miles south of the state park at Castac Lake and north within the Grapevine Creek region (Kelly and Stammerjohan 1990). Ethnographic data are limited for both groups, but knowledge of basic elements of daily life, material culture and ritual activities demonstrate an overall similarity between Chumash groups and some similarity with Kitanemuk culture (Bernard 2008).

##### *5.5.1.3.3.5 Tataviam*

Minimal information is known of the Tataviam. Located south of the Kitanemuk, the Tataviam spoke a language of the Takic family of Uto-Aztecan which was closely related to the Serrano and to a lesser degree the Luiseño (Underwood and Cleland 2002). It has been suggested that the core territory of the tribe is north of the Los Angeles metropolitan area, overlapping the western part of the Angeles National Forest and including the northwest portion of Los Angeles County and parts of Ventura County (King and Blackburn 1978; BioSystems Analysis, Inc 1989; Johnson and Earle 1990). The Tataviam may have also inhabited the La Liebre area during the historic period (King et al. 1974; Sutton 1980; Johnson and Earle 1990). Based on mortuary data in the region, Tataviam possibly held only portions of the foothills and valley floors near Palmdale during the late prehistoric period (Sutton 1980). However, there is confusion regarding the precise extent of their territory, known as the Castac/Alliklik/Tataviam problem (Bernard 2008).

One Tataviam site, Bowers Cave, located between present-day Newhall and Piru, is located approximately 4.9 miles south of the Gorman Substation. Bowers Cave contained ritual objects that appear to be identical to historically described Chumash ritual objects, leading evidence that the Tataviam participated in Chumash ceremonies (Harvey 2011). Due to their location within the mountains, it is likely that the Tataviam relied heavily on yucca (*Hesperoyucca whipplei*) as a major resource, as well as exploiting similar plant and animal resources like their neighbors (King and Blackburn 1978; Harvey 2011; Switalksi and Larkin 2013).

#### 5.5.1.3.4 Historic Background

A "theme" is one of the three components of a historic context. The theme is the subject or topic of historical study. As a result of research and consultation using historic contexts developed previously, the project team identified the following themes associated with properties identified in the Project:

- Homesteading and Settlement of Kern County, 1850s-1970s
- Exploration, Transportation, and Travel Pathways, 1827-1974
- Agriculture and Ranching in Kern County, 1842-1975
- Water and Electrical Power Conveyance, 1902-1973
- Fort Tejon and The Tejon Ranch Company, 1843-1970s

Each of these historic themes is examined in the following pages. In addition, specific historic contexts that provide geographic and temporal placement are developed for each theme. Properties identified in the Project may have important associations with more than one theme or context.

##### *5.5.1.3.4.1 Theme 1: Homesteading and Settlement of Kern County, 1850s-1970s*

Beyond Native American settlements and villages, there were no residential communities in the project area until Anglo Americans entered the area in search of mineral wealth. Settlements during the Spanish and Mexican eras were well outside the project corridor in coastal regions of California. American settlement prior to the gold rush also concentrated in the coastal area and, in a few instances, the central valley. It was not until the mining frontier crossed back east over the Sierra Nevada in the 1850s after the initial gold rush played out on the western slope that significant settlement occurred in the project area.

These early settlements were the ubiquitous “boom town” common to locations of resource extraction. As mining operations succeeded, settlements and towns quickly followed. The earliest in the vicinity of the project area was Keyesville in 1853. While some mining towns vanished as quickly as they sprung up, others survived longer depending on the nature of the ore body. For the more permanent communities, merchants and commercial activities sprang up to supply the daily needs of miners. Over time, as routes of transportation developed, settlements associated with travel routes and military outposts grew.

California, New Mexico, and Arizona each have important context studies concerning homesteads and the development of townsites. Caltrans completed the California study in 2010. Titled “A Historical Context and Archaeological Research Design for Townsite Properties in California,” the guidance is directed towards archaeological properties. However, the context study contains excellent information on the geography and history of town development in California (Caltrans 2010). The New Mexico context study, also completed in 2010, focused on "homesteads and ranchos." In contrast to the California study, the New Mexico context covered all areas of potential significance for properties associated with homesteading. It was not limited to archaeological resources (Merlan 2008). The earliest of the three context studies is the one from Arizona, prepared by Pat H. Stein in 1990. The Arizona study is similar to that of New Mexico by providing a broad context covering all areas of significance (Stein 1990).

Property types associated with homesteads and settlements are broad. For homesteads, these include houses, outhouses, water production and conveyance features such as wells and tanks, remains of agricultural fields and orchards, and stock raising buildings such as barns and corrals (Stein 1990). Property types associated with townsites and urban development also cover a wide range. These start with basic residential and commercial buildings for housing and for business activities. Moving out from individual buildings in urban areas, there is a wide range of infrastructure associated with urban life that is part of the built environment. These include wet and dry utilities, transportation facilities, refuse disposal, industrial buildings, and public buildings to name a few. Urban form and layout in terms of plat maps and subdivision plans are also part of the built environment that may be crossed by the transmission corridor (Caltrans 2010). The period of significance for this theme begins in the 1850s with the first mining camp boom towns in the project area and continues until the late 1970s when a downturn in the oil industry led to a substantial out-migration of population.

*5.5.1.3.4.1.1 Homesteading*

Homesteads are generally defined as "farmsteads that originated in legislation intended to open up public lands for settlement." (Hardesty and Little 2000) The suite of laws that made homesteading of the American West possible began with the Homestead Act of 1862. The Homestead Act and its amendments were integral to the settlement of the American West, and by 1958, nearly 39 million acres of federal land had been transferred to homesteaders in California alone (Caltrans 2007).

There were a number of small homesteads in Kern County. However, land development in the area was dominated by larger interests who used the public lands laws to their advantage and amassed tracts of considerable acreage. This started with the reclamation of swamp lands along the Kern River in the 1850s and extended through the Desert land Act of 1877. In addition, lands were granted to the Southern Pacific Railroad that passed through the area as an incentive for construction and to generate traffic for the railroad. Railroad lands in Kern County amounted to 1,600,000 acres. All of these activities resulted in the large tracts of land under the ownership of a few. In later years, this came to the attention of reformers who criticized this concentration of wealth and power. Most noteworthy of the critics was Paul S. Taylor, an economist at the University of California at Berkeley, who attacked the provision of water under the terms of the 1902 federal Reclamation Act on tracts of land larger than 160 acres (Taylor 1949).

Another critic of the application of the public lands laws was Paul W. Gates, a history professor at Cornell University who conducted significant research in California. His work culminated in the book *History of Public Land Law Development* published in 1968. Gates subsequently published a study on Kern County specifically in 1978, titled *Land Policies in Kern County*. Studies such as those pioneered by Taylor and Gates focused attention on large land holdings in California's Central Valley, and in particular on Kern County (Gates 1979).

As the Homestead Act was originally written, in order to receive a 160-acre land grant, an applicant was required to make improvements, including establishing a residence and working on the land, and remain on the claim for five years. The original Act was open to heads of households or those at least 21 years of age to file for up to 160 acres of land, making it available to U.S. citizens, freed slaves, new immigrants, single women, and people of all races were eligible (Fink 2019). Though the requirement for "proving up" homestead claims changed over time, applicants were required to live on the land for a set amount of time and make improvements, which required a significant amount of work and investment. For many homesteaders to successfully receive their land patent, they were forced to take out loans and live frugally (Caltrans 2007).

Homesteading, though initially focused on agriculture, shifted to include ranching. Out of necessity, many homesteads were characterized by multiple economic endeavors. Regions with marginal soils or sparse water featured homesteads that were characterized by multiple-use properties. In areas where water was scarce, early homesteaders had to diversify in order to subsist and perhaps turn a small profit. This changed with the advent of agricultural irrigation in the desert regions (Caltrans 2007). Subsequent homesteading laws and amendments to the Homestead Act of 1862 changed the requirements to accommodate the realities of life in the arid West by allowing larger plots for farming and stock-only patents, as well as more flexibility in residency requirements that allowed applicants to spend periods of time away from the homestead to pursue a second livelihood (Merlan undated). The 1938 statute entitled "An Act to Provide for Purchase of Public Lands for Home and Other Sites" patented small unreserved public lands into 5-acre lots for individual homes. The amount of land available to homesteaders in the western United States was greatly diminished in the 20th century due to the implementation of the Taylor Grazing Act of 1934, and homestead claims dropped sharply after this time. The Homestead Act remained in effect until it was repealed in 1976, though provisions were made for homesteading to continue in Alaska until 1986 (NPS 2019).

*5.5.1.3.4.1.2 Urban Settlements in Kern County*

Kern County settlement and population booms primarily aligned with the discovery of natural resources, transportation advancements, and agricultural opportunities, including the Kern County Gold Rush (starting 1853), Homestead Act (1860s-1870s), Southern Pacific Railroad and Tehachapi Loop (1870s), oil discovery (1899), and the Dust Bowl Migration (1930s). Prior to the Gold Rush, American settlement typically concentrated in the coastal areas of California.

Bakersfield is the largest incorporated city in Kern County. The first large group of non-native Americans were attracted to Bakersfield when gold was discovered along the Kern River in the 1850s, and permanent homes began to be established shortly thereafter when Christian Bohna settled at Kern Island, the future site of Bakersfield, in 1860 (The Bakersfield Californian undated). The City of Bakersfield was laid out by Colonel Thomas Baker to accommodate the influx of prospectors, miners, and settlers in 1869. Transportation advances, including the completion of the Southern Pacific Railroad terminus in 1874, located two miles east of Bakersfield, encouraged further settlement. As the availability of gold decreased, an agricultural irrigation system was established to diversify industries, which led to major increase in farming spurred by the fertile soil, clean air, and inexpensive land of the San Joaquin Valley. Homesteading increased once again when significant amounts of oil were discovered at the Kern River Oil Field in 1899. This led to a rapid increase in residential and commercial construction. In 1900, the Federal Census recorded Bakersfield's population as 4,836 and Kern County's as 16,480. In 1900, the Kern River Power Company was organized in 1901 to build power plants that would provide power to Kern County's growing population (Comfort undated). By 1930, Bakersfield's population was approximately 26,000 (Nickel 2014). A few years later during the Dust Bowl Migration in the mid-1930s, approximately 17,500 migrants from Midwestern states arrived in Kern County alone (America's Great Migration Project 2019). The Dust Bowl Migration consisted of Midwestern farmers from states including Oklahoma, Kansas, Arkansas, Texas, and Missouri who migrated to California from 1935-1940 in search of employment, having been driven from their homes and livelihoods in the Midwest due to severe drought, dust storms, and declining crop prices.

The history of the Kern County Land Company illustrates the importance of agriculture to urban development in Bakersfield. It was incorporated in 1890 by James Ben Ali Haggin and Lloyd Tevis. At that time they had form 400,000 to 500,000 acres of land with water rights, canals, and ditches in the vicinity of Bakersfield. In 1893, the firm constructed their office building at 19th and H streets in Bakersfield, known as the Tevis Block. Ranching was their primary enterprise. Over time, the firm diversified into three areas: orchards and vineyards, row crops, and land leasing - primarily for cotton. By the 1930s oil production comprised a large portion of the company's income, and allowed the continuation of agriculture at the surface. It became one of the largest oil companies in the U.S. by 1940. After WWII, the firm diversified into manufacturing, mining, and land development. Stockholders approved a merger with oil company Tenneco in 1967, forming Tenneco West. This brought in more oil industry expertise. Subsequently, the corporation moved the other way, and in 1987 sold the California farming operations to Dole pineapple retailer Castle & Cooke. This sale also brought with it an interest in Castle & Cooke's commercial and residential real estate developments, returning those activities to the Bakersfield area (Brewer 1982; Keppel 1987).

As a result of the emphasis on corporate agriculture and ranching activities in Kern County, settlement was closely associated with immigrants that traveled to the area to work jobs in agricultural fields or in cattle and sheep ranching. This resulted in immigrants from other countries coming to Bakersfield and Kern County. Notable contributions were made by Japanese, Filipino and Mexican workers in agriculture. One example of labor camp settlement is the Kawasaki Labor Camp near Delano for Japanese workers (NPS undated). The Filipino Community Hall in Delano is associated with the Filipino community, one of two sites in Kern County evaluated by the NPS (NPCA undated). Bakersfield had a strong Basque community. Many Basque immigrants came to Kern County for work in the sheep industry. A Basque community developed near the railroad station in Bakersfield, the first point of embarkation for migrants (California High Speed Rail Authority 2016). Tehachapi settlement was similar to that of Bakersfield, with the first permanent settler recorded as John Moore Brite in 1854 (Morgan undated). The community was a key point for transportation from mines in the Owens Valley area to Los Angeles (Troy et. al 1997). It was initially planned and laid out by the railroad affiliate Western Development Company. The completion of the Tehachapi Loop in 1876 coincided with the renaming of two downtown areas, Williamsburg and Greenwich, to Tehachapi. Fred Boden constructed the first house in the newly renamed Tehachapi in 1877 (Tehachapi Heritage League 2019). Tehachapi was incorporated in 1909, and surrounding ranchland was largely developed in the mid-1900s (Jackson 2019).

*5.5.1.3.4.1.3 Oil Towns*

A number of towns in Kern County are associated with a major petroleum and natural gas production region in the western portion of Kern County. Several towns grew as a result of the oil industry including Maricopa, Taft, and McKittrick. These are towns that exist exclusively because of nearby oil reserves, with Taft at the center. The original discovery of oil in the region occurred in the late 19th century near Maricopa, seven miles south of Taft. Many other oil and gas accumulations were discovered in the area during the early-to-mid-20th century, notably the Midway field, Sunset field, and the Buena Vista. Another oil community is McKittrick, incorporated in 1911. It is home to the McKittrick oil field and the McKittrick tar pits.

Taft is built in the center of this oil producing area. Standard Oil, later the Standard Oil Company of California (modern Chevron), made Taft its corporate operational headquarters. At one time it is reported that as many as 6,000 inhabitants of Taft were employed by Standard Oil. The infrastructure to run a large oil and gas company included: a rail spur from the line running through Taft, steel and timber for derrick construction and maintenance, pipe, valves, numerous offices, an expansive and highly specialized machine shop, supply shops, the car and truck fleet, bunkhouses for workers, and company homes for employees. The huge complex gradually closed down over a period of many years. In 1968 Standard Oil of California moved its accounting and finance offices to Concord, California. In the late 1980s the machine shop was closed and auctioned, signaling the end of an era. Modern techniques have extended the life of oil fields surrounding the towns. Taft is home to the West Kern Oil Museum.

###### *5.5.1.3.4.1.4 Mining Towns*

Kern County experienced a major increase in population after placer gold deposits were discovered along the Kern River in 1851, resulting in the Kern River gold rush from 1853 to 1854. Settlements established by gold prospectors soon sprang up to the northeast of the project area, including Keysville, established by Richard Keys, and Whiskey Flat, established by Lovely Rogers. Whiskey Flat was eventually renamed Kernville.

###### *5.5.1.3.4.1.5 Agricultural Settlements*

Irrigation canals were built by the Kern Valley Water Company to drain excessive water and provide irrigation for agriculture. Additional canals were constructed around Bakersfield to divert water from the Kern River. The canals were used to provide water for a growing agricultural area that began in Edison and spread to Delano, McFarland, and Jasmine (Morgan undated). Besides Bakersfield, the next most significant agricultural town in the project area is Arvin. The community got its start in 1906 as an agricultural area and added a post office in 1914. While Arvin had oil fields nearby that were in production during the 1920s, Arvin became known primarily as an agricultural town during the 1930s with the opening of the Arvin Farm Labor Camp in 1937. The camp served as the inspiration for several portions of the famous John Steinbeck novel *The Grapes of Wrath* (Nealand 2008). Formally called the Arvin Farm Labor Supply Center, this settlement was also known as the “Sunset Camp” or “Weedpatch Camp” and was constructed about five miles west of Arvin. In the late 1930s it housed about 300 people who lived in cabins and tents. Immediately after WWII, it was leased to a group of growers for migrant housing. The housing authority of Kern County assumed operation of the facility in 1950. In 1965, Kern County assumed ownership of the camp. It continues to operate as a labor camp today and is listed on the NRHP (Lutz 1995).

##### *5.5.1.3.4.2 Theme 2: Exploration, Transportation, and Travel Pathways, 1827-1974*

Pedestrian, wagon, rail, and automobile transportation systems through the San Joaquin Valley were the impetus for westward expansion within the U.S. throughout the historic period, drawing fur trappers, miners, and settlers to Southern California from the Southwest, the Great Basin, and beyond. Early routes utilized by the Spanish in the 1770s largely followed Native American footpaths, used by the Yokut, Kitanemuk, Aliklik, and Chumash. Those who came after the Spanish, including American fur trappers beginning in the 1820s and miners beginning in the 1850s, also relied on existing routes as a basis for their new trails, wagon roads, and stage roads, and later railroads as well as improved roads and highways.

The period of significance for this theme begins with begins in 1827 with the journey of explorer Jedediah Smith through the project area and continues until 1974 when Interstate-5 was completed.

###### *5.5.1.3.4.2.1 Trails and Footpaths*

Historic period transportation routes into and through Kern County were significant for opening up the region and connecting southern coastal California markets to the East and Midwest along stage lines and mail routes. Early routes consisted of trails that generally followed pre-existing Native American trails. The period of significance for early historic period trails in the Kern County region begins in 1827 with the journey of explorer Jedediah Smith through the project area and continues until 1874 when the Southern

Pacific Railroad crossed the valley. This time period begins with the establishment and use of travel routes by the Spanish, Mexicans, and Americans and ends with the replacement of pedestrian trails by wagon and stage roads. It is followed by the development of railroads, and, later still, with vehicular roads.

Native American footpaths in Kern County travelled west along the San Andreas Fault to Gorman, north over the Tejon Summit through Lebec, past Fort Tejon, and down Grapevine Canyon to the southern end of the San Joaquin Valley (Malnic 1987). Spanish roads primarily followed Native American footpaths. Another former Native American trail through the Tehachapi Mountains was used by Joseph Reddeford Walker in 1834. One of the most significant Native American travel routes passed through Grapevine Canyon, which is located in today's Bridge Canyon Wilderness area (NPS undated). A freshwater spring flows out of the canyon floor in non-drought years, and evidence of habitation by native people during the prehistoric era can be found as petroglyphs etched on boulders at the entrance of the canyon. Previously called Canada de las Uvas, the road was used as a pass to get to Fort Tejon (Comfort undated).

During the Spanish era starting circa 1780, the primary north/south route in California's interior was the El Camino Viejo (the old road) which ran along the eastern edge of the San Joaquin Valley from Los Angeles to the Mission Santa Clara de Asís near San Francisco Bay. This route is frequently called California's second colonial road, after the primary coastal route of El Camino Real (the royal road). El Camino Viejo also relied on Native American footpaths as a guide, passing through San Emigdio Canyon and up the west side of the San Joaquin Valley. Initially utilized primarily by Spanish oxcarts, it was well established by 1820 (Williams 1970).

##### *5.5.1.3.4.2.2 Wagon Roads*

Prior to the 20th century, the county's local road system was based on trails and wagon routes. A system of wagon roads developed gradually based on routine travel and the continued use of earlier pathways. The movement of farmers to transport crops to market often resulted in little more than ruts from rural areas into communities. Through the efforts of citizen groups and local and state governments, these wagon roads evolved into a regional and national network of highways during the 20$^{th}$century.

The establishment of a network of wagon roads beginning in the 1850s resulted in more reliable regional transportation that facilitated settlement and local economic development. The roads were built to connect isolated agricultural and ranching communities. The period of significance for wagon roads began in 1874 and continues until 1910, the period in which wagon roads played a key role in the economic development and settlement of Kern County.

In 1853, the prospect of gold along the Kern River led to the construction of the Stockton-Los Angeles Road, which was constructed along the east side of the valley. It ran along the Sierra Foothills and eastern San Joaquin Valley communities to avoid the tule marshes on the west side of the Central Valley. It ran southward from Stockton though Tejon Pass to Los Angeles. The Stockton-Los Angeles Road was the primary means of transportation south from Stockton and saw heavy use after the Kern River Gold Rush began in the mid-1850s. It continued to be an important wagon route through the 1870s when the Southern Pacific extended through the San Joaquin Valley. After the arrival of the railroad, it saw continued use as a local connecting route (Wikipedia undated; Goddard 1857).

In 1857, Congress funded a road for Overland Mail stagecoaches to deliver the mail to and from California. This was the famous Butterfield Overland Mail route that had two starting points, one in the northern section of the country at St. Louis and the second in the south at Memphis. Under the direction of U.S. Postmaster General Aaron Brown of Tennessee, Butterfield tracked far to the south through New Mexico and Arizona. This road entered Kern County near Fort Tejon and traveled down Grapevine

Canyon, where the coaches crossed the Kern River by ferry. The route from Los Angeles to Bakersfield alone was 150 miles, and took nearly 33 hours (Tejon Ranch undated; USPS undated).

*5.5.1.3.4.2.3 Railroads*

In 1874, the Southern Pacific Railroad was extended to East Bakersfield (formerly Sumner). Passenger service began November 10 of the same year, greatly disrupting wagon traffic along the Stockton-Los Angeles road as well as the old Spanish roads. This brought an end to the early period of transportation in the project area. The Southern Pacific Railroad had been incorporated in 1865 by the owners of the Central Pacific Railroad: Leland Stanford, Mark Hopkins, Charles Crocker, and Collis P. Huntington (Dumke 1954).

The history of transcontinental railroad construction in the southern part of California begins in the 1850s with surveys by Lt. Robert Stockton Williamson. Williamson was tasked by the U.S. government to identify a southern route for the railroad into California. He led one of four USACE topographic surveys to find the best route to the West Coast. The motivation for this route was largely economic, as there was a need to establish a more direct route for goods from the Pacific and China to markets in the Eastern U.S. and to protect the many westward travelers from hostile Native Americans (Stickel and Weinman-Roberts 1980). Williamson's party left Benicia, California and travelled south exploring passes through the Sierra Nevada Mountains. They identified Tehachapi and Tejon Pass as the best passes (Stickel and Weinman-Roberts 1980).

In the 1860s, as the construction of the first transcontinental railroad was underway, the Union Pacific Railroad began exploring routes for a second transcontinental along the 32nd and 35th parallels. In January and February of 1868, General William J. Palmer explored these routes. Palmer decided that the 35th parallel was the best route and surveyed a line along this parallel, going west to Tehachapi Pass. This line would later become the route of the Southern Pacific Railroad, which passed through Daggett to Needles and Topock where it connected with a line constructed by the Atlantic and Pacific Railroad.

Initial plans were to build a railroad line that traveled from the Bay Area along the coast south; however, subsequent surveys caused the route to change, going through the San Joaquin Valley via Pacheco Pass (Dumke undated). In 1871, Congress authorized Southern Pacific to essentially be the only railroad entity to "construct a line of railroad from a point at or near Tehachapi Pass, by way of Los Angeles, to the Texas Pacific Railroad at or near the Colorado River." This action essentially blocked the Texas Pacific in California (Lesley 1936). Seven years later Congress granted "the right of way through the military reservation at Fort Yuma" to the Southern Pacific, leading the way for the railroad company to complete a transcontinental railroad route along the 32nd parallel route as originally envisioned by the Gadsden Purchase treaty ratified in 1854 (Lesley undated).

Tehachapi Pass was considered a major obstacle for the Southern Pacific. Civil engineer William Hood was given the task of designing the railroad line to go over the Tehachapi Pass, rather than keeping at the foothills of the mountain range (Gossard undated). The design he came up with included 18 tunnels on a circular track, creating two large circles that looped over and around themselves (Gossard undated). This would become known as the Tehachapi Loop. Construction of the loop required a workforce of 3,000 men that dug, shoveled and tunneled the path. Approximately 1,000 Chinese workers were hired to handle the 600 kegs of blasting powder used per week (Gossard undated). Construction began in 1874 and the loop opened in 1876. These tracks are still in use, though today used mainly by freight trains owned by Union Pacific, who absorbed Southern Pacific in 1996 (Brossard 2014). Currently, only 11 of the original 18 tunnels remain in service (Gossard undated).

#### *5.5.1.3.4.2.4 Vehicular Roads*

With the advent of the automobile, roads and travel pathways became increasingly important, and the California State Bureau of Highways was created in 1895. Road and highway improvements during the 1910s and 1920s turned wagon roads into higher speed automobile routes. The development of improved roads in the Kern County region was part of a national "Good Roads Movement" that arose in the 1880s as a response to the increasing popularity of bicycles and then automobiles in the early 1900s (Roland et al. 2011). A number of interest groups began pressuring federal and state governments to take control of road building and maintenance. State and local chapters of the National Good Roads Association lobbied the government for roads.

Because the valley is oriented north-south, the two major vehicular corridors follow this same orientation. The first of these was U.S. Route 99 which echoed the Stockton - Los Angeles Wagon Road along the east side of the valley, passing through Tejon Pass. In later years, after agriculture use and groundwater pumping drained the low-lying western portion of the valley, the second major north - south route could be constructed. This was Interstate 15. Notable east - west vehicular roads include California State Route 178, State Route 58, State Route 223, and State Route 138. Important local vehicular routes intersecting the corridor include Muller Road and Comanche Point Road.

#### *5.5.1.3.4.2.5 Ridge Route / US 99*

On March 22, 1909, the California legislature passed the "State Highways Act" authorizing a bond vote by the people of the state in November. The outcome was favorable, making $18 million in highway construction bonds available on December 31, 1910. One of the first projects was the Ridge Route, completed in 1915. This was the first paved road to connect Los Angeles and Bakersfield over the Tejon Pass (Douglas 2015). It was improved with reinforced concrete in 1919 (Kehe 2015). The Ridge Route was a crucial component in connecting Northern and Southern California via Bakersfield to Los Angeles, cutting the distance to Los Angeles by 58 miles compared to the nearby Midway route through Mojave and Tehachapi Mountains. However, due to the rugged terrain and lack of funds for blasting, the completed route from Bakersfield to Los Angeles took 12 hours, and included 697 turns from Castaic to Gorman (Masters undated). With this abundance of turns as well as a steep grade and narrow roadway, accidents were common. Runaway trucks and the inability of early vehicles to navigate sharp curves resulted in 31 deaths from 1921 to 1928 alone. This was despite a 15 mph speed limit, fencing, and 10-inch curbing. In 1926, the old Stockton - Los Angeles Road including the Ridge Route was designated U.S. Route 99 (Kehe undated).

U.S. Highway 99 through Tejon Pass was improved in 1933, when the Alternate Ridge Route opened to the west. This avoided the ridge top and reduced the commute to Los Angeles by 9 miles (about 45 minutes of travel time). Motorists greatly preferred this more linear, three-lane road. As a result, the majority of small businesses along the original Ridge Route closed due to lack of traffic. As travel along the alternate route grew, so did roadside attractions including motels, diners, and gas stations (Dodd 2016).

With the advent of WWII, non-essential or non-military road building halted. During the war, highway usage by civilians was greatly diminished due to rationing of gas and tires. Road construction activities were limited to roads required for military purposes. The Defense Highway Act of 1941 restricted the road building activities of state highway departments by focusing federal funding on the Strategic Highway Network; on construction of roads to military bases, defense manufacturing plants, and air bases; and on advanced engineering surveys for projects slated to start after the war (Knowlton 1963). In 1941, U.S. Route 66 was designated as one of the "National Highways for Defense," which made it eligible for improvement and construction funding. Additionally, access routes to military posts essential to the war effort were identified.

In the post-WWII era, highway and road construction increased significantly. In 1944, Congress passed the Federal-Aid Highway Act to address road problems that were the result of lack of funding and maintenance during the war. This act provided funds for highways and authorized the designation of a national system of Interstate Highways. Post-war prosperity and a significant increase in private automobile ownership required Congress to pass subsequent acts to fund the growing demand for better transportation routes and to alleviate traffic congestion (Roland et al. 2011).

*5.5.1.3.4.2.6 Interstate 5*

In 1956, Congress passed the Interstate Highway Act. The Act created a national freeway network, and the route of US-99 became the basis for a modern superhighway in the 1960s, Interstate 5. Post-WWII suburban subdivision development in Kern County resulted in a network of paved local roads to serve these communities. Following the war, the population of the United States grew by 50% between 1940 and 1970, and many families moved from farms to urban and suburban settings. This shift was made possible by a number of factors, including a significant increase in private automobile ownership that allowed families to live outside urban centers in the suburbs and effectively commute to their jobs (Caltrans 2011). The majority of the 1950s population growth occurred in the suburbs. California's population grew more than any other state in the U.S., in part because many military personnel stationed in the state decided to stay (Caltrans 2011). The need to house all the new residents of California led to the suburban housing development boom and further development of accompanying transportation infrastructure. The post-war freeway system was largely undeveloped despite extensive pre-war federal and state level planning, surveying, and funding for improved highways and roads (Roland et al. 2011). Despite this, home builders placed developments along the planned freeway routes or determined that existing roads would be sufficient to accommodate the needs of development (Caltrans 2011). The construction of post-war suburban housing developments in Kern County was part of this state-wide trend. The transportation network that grew up alongside it was consistent with similar developments elsewhere in the state.

Interstate 5 began construction in 1965 and was fully completed statewide in 1974. At the time, the construction of Interstate 5 rerouted a large stretch of US-99, necessitating immense cuts and fills that moved 69 million cubic yards of earth, enough to fill a railroad train of gondola cars 13,500 miles long (Malnic undated). Upon completion, Interstate 5's generous 8 lanes of traffic extended 800 miles from Mexico to Oregon, the longest freeway in the State of California at a total cost of $1.5 billion (Stall 1971). The 184 mile stretch through the San Joaquin Valley, completed in 1972 at a cost of $83 million, reduced the commute time from Bakersfield to Los Angeles to a mere 2 hours (San Diego Union 1972).

*5.5.1.3.4.2.7 Highway 178 / Kern Canyon Road*

This state highway exists in two segments: a west and an east segment. The western segment is in Kern County. A separate eastern segment is in Death Valley. Today, the western segment starts from U.S. Route 99 in Bakersfield and terminates at the intersection of State Route 14 just west of Ridgecrest, California. Approximately 3.42-miles of the western segment is located within the general project area (indirect/direct corridor).

Construction on a road through the Kern Canyon began in the mid 1890's. The road was graded dirt and extended from the mouth of the canyon (15 miles east of Bakersfield) to the site of SCE's Kern River No. 1 Powerhouse about two miles inside the canyon. This road was built by SCE for constructing their Kern

River No. 1 Hydroelectric Project between 1902 and 1907. State Route (SR) 178 was one of the routes constructed as a result of the third state bond act in 1919. Originally known as Legislative Route 57, it was 202 miles long starting at Santa Maria on the coast. It passed through Bakersfield and went along the Kern River. The state highway bond issue of 1919 allowed for the grading of the road between the KR1 Powerhouse and Democrat Springs at the top of the canyon (location of KR1 Democrat Dam). The grading was done by convict labor from Folsom Prison Camp 9 and was completed in 1924 at a cost of over $530,000. The severe cost of the grading was due to the steep sides of the canyon wall and the rock that had to be blasted out of the way to make the roadbed. After the road emerged from the canyon it went through Walker Pass to the junction at Freeman where it connected with SR 14. The completion of SR 178 took nine years from 1922 to 1931. In 1933, Legislative Route 57 was signed as SR 178; a designation that continues until today (socalregion.com undated; Wikipedia undated).

*5.5.1.3.4.2.8* *<u>State Route 58</u>*

The eastern portion of SR 58 started in 1919 as Legislative Route 58. It began in Mojave and went east through Barstow, then on to Needles and the Arizona state line at Topock. Today, SR 58 is a major west-east paved highway that runs through the Coastal Ranges (approximately 7-miles north of San Luis Obispo), San Joaquin Valley, Tehachapi Mountains, terminating at the Mojave Desert. Approximately 1.19-miles of the state route runs through the project area (direct/indirect APE/API).

The western portion of SR 58 was originally Legislative Route 57 in 1919 beginning in Santa Maria and going to Bakersfield. The link between Legislative Route 57 and Legislative Route 58 was first constructed as an upgraded access route through the Tehachapi Mountains running alongside the Southern Pacific tracks towards the Mojave Desert. The road between Barstow and Topock was part of Route 66. At Barstow, Route 66 turned south to San Bernardino and that portion of Legislative Route 58 extending through Mojave to the Tehachapi Mountains was signed as Route 466 (Wikipedia undated).

*5.5.1.3.4.2.9* *<u>State Route 223</u>*

This road runs for 33.9 miles through Bakersfield and Arvin. Also known locally as East Bear Mountain Boulevard, it passes primarily through agricultural lands, the City of Arvin, and a portion of the mountain region south of CA-58, extending from US-58 to Coles Levee Road. Approximately 1.05-miles of the road is located within the project area.

Bear Mountain Boulevard was constructed in 1915 as an east - west road that facilitated access to the Ridge Route. It served as a collector for traffic from agricultural lands south of Bakersfield in the vicinity of Arvin in the southern portion of the San Joaquin Valley. In 1933 Bear Mountain Boulevard was adopted as an unsigned state highway. It was part of Legislative Route 140. West of US 99 LR 140 ran to Taft and was known as the Taft Highway. To the east, it ran to US Route 466 (State Route 58). This route was described on the 1934 highway map as “Taft to Route 58 via Arvin.” (California Department of Public Works 1934) In 1959 Bear Mountain Boulevard was dropped from Legislative Route 140 and became Legislative Route 264. In 1964, when all of California's routes were renumbered, it became State Route 223. It was extended to I-5 when this section of the interstate was completed between 1970 and 1974 (Wikipedia undated).

*5.5.1.3.4.2.10* *<u>State Route 138</u>*

This road passes through a small portion of the project area near the junction of SR 138 and Interstate 5 at Gorman. This is at the far southern extension of the project corridor at the Bailey Substation and Quail Lake. This road was first designated as Legislative Route Number (LRN) 59 was adopted into the State Highway system as part of the 1919 Third State Highway Bond Act. The road went between Baileys (a locality near Gorman and the Old Ridge Route) and Lancaster to the east. This segment of LRN 59 closely aligned with the path of the historic Stockton-Los Angeles Road. In 1931 LRN 59 was extended east to LRN 31 in Cajon Pass and by 1933 it was extended to LRN 43 near Lake Arrowhead. SR 138 was one of the original signed state highways designated in 1934. It went from the junction of US 99 at Gorman to the Junction of US 66 at Cajon, via Lancaster (gribblenation.org undated).

*5.5.1.3.4.2.11 Local Roads*

Comanche Point Road is a local road that extends east-west 16.5 miles from Arvin to Stallion Springs. It is approximately 20' wide, and consists of a graded one- or two-lane dirt road through the mountains with paving at the eastern end near Banducci Road. It was historically a wagon road and sheepherding route between the southern San Joaquin Valley and Tehachapi from the mid to late 1800s. Approximately 8.9-miles of the road is located within the project area (indirect/direct APE/API).

Muller Road is a west to east local paved road located in Kern County, extending 9 miles through Bakersfield. Currently, Muller Road initiates 1.5 miles west of Fairfax Road and terminates at SR 58. Approximately 1.05-miles of the road is located within the project area (indirect/direct APE/API). Muller Road is historically a wagon road established circa 1914, extending from where Southern Pacific Railroad crossed Caliente Creek to Fairfax Road. It is currently a 30-feet wide two-lane asphalt concrete road, maintained by Kern County. The western section from Fairfax Road to Bakersfield has been largely obliterated.

*5.5.1.3.4.3 Theme 3: Agriculture and Ranching in Kern County, 1842-1975*

Today, Kern County is one of the most prominent agricultural counties in the U.S. It routinely tops lists of the most productive counties in terms of vegetable crops and other products such as grapes, almonds and dairy lead the list of money earners. Historically, Kern County was a leading producer of cotton (USDA undated). The first agriculturalists were Native Americans who gathered wild crops such as acorns and manipulated fire and water to increase production of other foods. Native people learned additional agricultural and animal husbandry techniques from Spanish missionaries. By the time gold seekers arrived in substantial numbers after 1849, Native American tribes had extensive fields of melons and grain crops planted along the marshy banks of the Kern River (Beeman 2016).

Although Kern County is now known for agriculture, it got its early start in 1842 as the location of five Mexican land grants and home for ranching activities. This stemmed from Spanish and Mexican ranching traditions. Anglos embraced the ranching culture when they moved into the area after the Treaty of Guadalupe Hidalgo ended the War with Mexico in 1848. This was followed by an era of open range, during which large-scale ranching activities dominated the southern San Joaquin Valley. This continued until the arrival of the Southern Pacific Railroad in 1874 and the adoption of the "no-fence" law the same year. Subsequently, farming replaced grazing as the chief economic activity in the Valley.

In 2007, Caltrans prepared a historic context for agricultural properties in California. While the Caltrans study is focused on archaeological resources and archaeological research design, it still has important information regarding the agricultural built environment. California does not have a developed historic context for the closely related activity of ranching. The Caltrans 2007 context mentions cattle, sheep and hogs as important animal husbandry activities, as well as the dairy and poultry industry. All of these are significant activities in Kern County (Caltrans 2007).

The period of significance for this theme begins with the first Kern County land grant in 1842 and continues until the adoption of the California Labor Relations Act in 1975.

##### *5.5.1.3.4.3.1 Ranching*

The use of vast lands for animal husbandry got its start in the Spanish era in California. The cattle and sheep industry began with the twenty-one mission outposts established in upper or Alta California. Most of these missions were located along the coastal areas of California. Mexico declared its independence from Spain in 1810. A long struggle to free Mexico from Spanish colonialism followed, eventually culminating in 1821. Alta California became a territory of Mexico. The original settlers and their descendants became known as Californios. They were eager to trade for new commodities, finished goods, luxury goods, and other merchandise. The Spanish had blocked trade with the United States in the colonial era. The Mexican government abolished this no trade policy and soon regular trading trips were being made.

The two other great changes in California during the Mexican era from 1810 to 1846 were the end of the mission system and an easing of rules for awarding land grants. Mexico, in response to demands for the Catholic Church to give up its mission property, started the process of secularizing the Franciscan run missions in 1834. By December of 1836, nearly all of the missions had been secularized. The Franciscans soon abandoned most of the rest, taking with them almost everything of value they could. Afterwards, locals then plundered the mission buildings and grounds for construction materials, furniture, and any items that could serve other uses. After the Mexican government secularized the Missions, many of the surviving Mission Indians switched from being unpaid workers for the missions to unpaid laborers and vaqueros for California owned ranchos.

The second great change was awarding of land grants. While this practice had been established in the Spanish era, with Mexican independence the rules were changed to encourage more settlers. These were codified in Mexican law in 1828. One of the most noteworthy land grants of the Mexican era went to John Sutter. In 1839 Sutter built a fort on his ranch near Sacramento he called New Helvetia. This ranch became the center of agricultural development in the Central Valley and the destination for travelers journeying west along the California Trail. It became the center of the California gold rush after 1848.

In the Southern San Joaquin Valley, five land grants were awarded by the Mexican government in the years from 1842 to 1846. These ranchos were populated with small Mexican longhorns, a sturdy and rugged breed of cattle. During the American era, these ranchos gradually came under control by Americans. The cattle and the labor remained the same, with the longhorns and vaqueros continuing their established relationships. The demand for beef in the mining districts of northern California led to steady use of the valley as a grazing area. Ranchers took advantage of the free range, grass, and water in the area. Vaqueros located their camps at the base of the Tehachapi foothills, shifting between valley grazing in the winter and mountain pastures in the summer (Ludeke 1980).

Cattle interests dominated California in the 1850s, as they did in other areas of the American West. The California legislature passed the Trespass Act in 1850, placing the burden on farmers to erect a “lawful fence” to provide legal protection from the damage caused by grazing animals. This was called the “Fence Law” and was a burden to farmers in the days before inexpensive barbed wire made fencing affordable.

Early settlers avoided the flat land of the valley itself, where the Kern River flowed freely through sloughs and marshes as it created wetlands surrounding Buena Vista Lake and Kern Lake. By the end of the 1850s, California passed legislation to allow farmers to reclaim these “swamp lands” as they were known. This legislation was patterned after similar legislation at the federal level directed towards southern States, Arkansas in particular. In 1857, the California Legislature granted William F. and Joseph Montgomery the right to reclaim swamp land in the San Joaquin Valley. Lacking the financial wherewithal to develop the area, the Montgomery brothers sold out to San Francisco investors who took over the project in 1863. These efforts were successful and opened land in the valley to farming. The investors received aid from nature when a drought began in 1864 and further dried the wetlands along the river. The surveyor general proclaimed the land reclaimed and the investors received a patent in 1867. The land was promptly sold to settlers (Ludeke 1980; Hindle 2017).

Despite the arrival of farmers in the 1860s, Kern County remained the center of ranching activities. Stock were driven into the valley and still roamed free, utilizing the valley as a place of refuge from drought elsewhere. The dominant type of breed remained the Mexican or "Spanish" cattle, described as "fierce" and "well able to take care of themselves and their young in the tough company of coyotes, wolves, lions, and grizzlies." Settlers feared these animals, which were considered dangerous to a man on foot (Ludeke 1980).

As farmland around Bakersfield developed in the 1870s, and as the Southern Pacific extended its railroad in the valley, the days of free range were numbered. Local residents resented the fact that many of the cattle herds came from elsewhere, driven into the rich lands along the Kern River to take advantage of dense forage. Profits from this activity left the county. Damage from free range cattle to farm buildings and crops became intolerable. Agitation for a "no-fence" law began at Bakersfield in 1871. While predictable opposition emerged, the arrival of the railroad at Bakersfield in 1874 sealed the fate of the ranchers. The railroad reduced transportation costs, making fence posts and barbed wire easily available at a reasonable cost. In a big change from the fence law of 1850 that required farmers to fence lands in to keep stock out, the no-fence law passed by the California legislature in 1874 required ranchers to fence their stock in (Ludeke 1980).

After some expected litigation over the new law, by 1878 the days of the open range ended in Kern County. This did not mean that stock raising and sheep herding ended. However, it was restricted to private lands such as those at Tejon Ranch and similar ranches in the mountain foothills. The lowlands of the valley became home to farmers exclusively starting in the 1880s (Ludeke 1980).

###### *5.5.1.3.4.3.2 Sheepherding*

Sheepherding has a long history in the American West, in California, and in Kern County. Like cattle ranching, sheepherding dates to the Spanish era when flocks of sheep were brought to the New World. Many of these flocks were acquired by Native American and Mexican herders after the secularization of the missions in the 1830s. Sheepherding is associated with migrants from the Basque region in the border region between Spain and France. Basque people arrived early to California, one of the most prominent being Jose Antonio Aguirre from the coastal town of San Sebastian de Viscaya who became part owner of the Tejon Ranch land grant in 1843. Starting in the 1850s, Basques who had originally settled in other parts of the New World made their way to California for the gold rush. Like many others, Basques soon found that more wealth could be made providing supplies to the miners. Basques turned to their traditional occupation of shepherding and soon recruited villagers and family members from home to join them in California (Haggland 1983).

By 1900 there was a steady flow of Basques from villages in Spain and France to areas in California, Nevada, and Idaho where sheep raising took hold. As with cattle ranchers, the flat expanses of the well-watered southern San Joaquin Valley attracted sheep ranchers. The close proximity to the Sierra Nevada where mountain pastures awaited made Kern County particularly attractive. The location of Bakersfield on the railroad line made it an important destination point for Basque immigrants and a gathering point for young sheepherders who traveled to the area seeking jobs on the ranches. In time, a Basque community developed around the railroad station in Bakersfield. It was centered on the Noriega Hotel in Bakersfield, constructed in 1893 (Corwin 1989).

As they had in the old country, sheepherders adopted a pattern of seasonal migration. They spent the winters in the Central Valley and the summers in mountain pastures in the Sierra Nevada mountains. Seasonal winter rains in the valley provided lush feed in the flat lands. In the mountains, dry, warm summers allowed meadows to develop into wonderful areas for pasture. The well-worn travel routes between the valley and through Tehachapi Pass to the desert facilitated this seasonal pattern. Known as the California Sheep Trail, this was a 400-mile path from Kern County, through the Tehachapi Mountains to Mojave, up the Owens Valley through Lone Pine and Bishop, and into the high mountain meadows of the Sierra Nevada (Corwin 1989).

Changing dynamics curtailed some of the free-wheeling early days of open pasture in the mountains. Starting in 1905, the USFS began to regulate the use of the pastures in lands set aside as forest reserves. In 1934, Congress adopted the Taylor Grazing Act which further regulated nomadic herding. Despite these restrictions, sheep raising flourished in the first half of the 20th century. In 1938, Basques in the Bakersfield area established the Kern County Basque Club. Many Basques fled Europe starting with the Spanish Civil War in 1936 and continuing through the end of WWII. During the war, many Basques were recruited to fulfill the need for mutton and wool through labor contracts with the Western Range Association. Basques continued to dominate the shepherding jobs until the 1970s when a contraction began in the sheep industry. In 1915 over 7 million sheep were grazed on USFS land, by 1970 the number had been reduced to 2 million (Crittenden 2016).

The decline of sheep ranching is tied to a number of reasons and is generally dated to the 1970s. Competition from Australian and New Zealand sheep ranches increased, where extensive land areas available for sheep and large operations created economies of scale that reduced costs. The advent of the Endangered Species Act in 1973 eventually led to the creation of protected habitat set aside for California bighorn sheep and desert tortoise to protect them from respiratory illness traced to disruption of land and water resources by sheep. More recently, the proximity of both cattle and sheep grazing areas to farm production areas resulting in regulations creating buffer zones to protect vegetable consumers from contamination associated with animal contact (Galuppo 2015).

###### *5.5.1.3.4.3.3 Agriculture*

The control of water spurred the development of agriculture in Kern County. It was the location of one of the most famous water lawsuits in California history and the American West. In the case of Lux v. Haggin in 1886, the California Supreme Court decided that the riparian water rights of Miller and Lux superseded prior appropriation claims of Haggin and Tevis. This created a unique split system of riparian and prior appropriation water rights in California.

In the 20th century, Kern County was the scene of conflict between owners of agricultural properties and workers. This culminated in a divisive strike that was started by Filipino farmworkers in 1965 and ultimately taken up by labor activists César Chávez and Dolores Huerta. The strike was eventually settled in 1970 and followed by the adoption of the California Agricultural Labor Relations Act in 1975.

###### *5.5.1.3.4.3.4 Early Agriculture*

The Central Valley of California is drained by two great rivers: The Sacramento in the north and the San Joaquin in the south. Both of these rivers drain towards San Francisco Bay in the center of the state. In Kern County, the southern portion of the valley is drained by the Kern River. Prior to the arrival of European settlers, this vast area was the location of a lush riparian and wetland environment rich in animal and plant resources that were exploited by Native Americans.

From 1842 to 1846 the government of Mexico awarded five land grants in Kern County: San Emigdio, El Tejon, Castac, Los Álamos y Agua Caliente, and La Liebre. These grants did not result in any agricultural activity. As the grants were confirmed they were acquired by speculators who created large cattle ranches. In 1851, Congress established the California Land Act of 1851 which established a three-person commission to verify the validity of Spanish and Mexican land grants. While it took many years for some of the claims to be resolved, those in Kern County were completed by 1866 (Pisani 1991).

The ratification of the Kern County grants confirmed large amounts of acreage for ranching use. Actions by the federal government reinforced ownership of Central Valley land in large ranch tracts, further limiting farming activity. Large amounts were sold to speculators in the years prior to the Civil War. Even the Homestead Act of 1862 which allowed homesteading in California was initially dominated by speculators at the expense of small farmers (Pisani 1991).

In 1857, the state legislature passed an act calling for the reclamation of swamp land, opening a half million acres of land around Tulare Lake for agriculture. Investors W. F. Montgomery, Joseph Montgomery, A. J. Downes, and F. W. Sampson received the franchise to reclaim this land. However, those rights were acquired by Colonel Thomas Baker, the founder of Bakersfield, and Harvey S. Brown. Baker was awarded the patent for 89,120 acres, which was later rescinded and awarded to others. A legal battle eventually ensued over water rights, resulting in state legislation that determined the ownership and control of irrigation systems in 1866 (Morgan undated).

This allowed for the creation of the Kern County Land and Water Company near Bakersfield in the 1870s. Led by investors James Ben Ali Haggin, William Carr and Lloyd Tevis, the company eventually controlled more than 400,000 acres in the area. They used a variety of ways to acquire land, including purchasing lands granted to the Southern Pacific Railroad and utilizing the Desert Land Act of 1877. They started by completing six ditches in 1873 covering 5,000 acres. They then achieved majority control of the Buena Vista, Pioneer, and Stine Canals (Pisani 1991).

A dry year in 1877 triggered the epic lawsuit of Lux v. Haggin (69 Cal. 255), decided in 1886. This case pitted the prior appropriators of Haggin and the Kern County Land and Water Company against riparian users Charles Lux and Henry Miller. Miller and Lux utilized the waters of the Kern River to sustain many thousands of cattle that graze along the riverside sloughs and marshes. A drought starting in 1877 and continuing until 1879 dried up the sloughs and resulted in the death of upwards of 50,000 head. Miller and Lux claimed the diversions of Haggin and his partners made the situation worse (Igler 2001).

The Supreme Court of California made the ultimate split decision, ruling that both prior appropriation and riparian use held sway. While this was a victory for Miller and Lux, by the time the case was decided it was a moot point since the firm had already liquidated some of its holdings and reached an agreement with Haggin. Nonetheless, this was a turning point in California water law and led to the adoption of the Wright Act of 1887. It allowed for the formation of taxing districts to create mutual irrigation companies. This gave prior appropriators a leg up in the battle over scarce water resources. In the long run, it resulted in additional groundwater pumping in the central valley of California. In the short run, it allowed for the first extensive development of agriculture in Kern County as farmers flocked to the area to take advantage of the district infrastructure to expand farming in the area. As it turned out, many of these were tenant farmers of farmland because large-scale landowners continued to own much of the available land in Kern County (Pisani 1991).

##### 5.5.1.3.4.3.5 Cotton Boom

WWI brought a cotton boom to Kern County and created a new and important crop for California agriculture. The war disrupted traditional sources of cotton to the European combatants, particularly Britain which had sourced it supplies in Egypt. German submarine warfare threw the shipping lanes into disarray. At the same time supplies were short, new technology increased demand for this important fiber. For the first time motorized vehicles became an important part of the war arsenal, and soon airplanes were pressed into service as war machines. Cotton cord was a crucial component of the tires for wheeled vehicles and demand increased dramatically. Cotton fabric saw heavy use in the construction of aircraft wings. On top of these new demands, traditional needs for cotton clothing continued.

While cotton fabric needs could be met by regular crops in the American south, the new uses for tire cords and wing fabric required the "long-staple" type of cotton that had been obtained from Egypt. Scientists looked for new sources of long-staple cotton, one was found in Arizona where an ancient strain of long-staple cotton was encountered on the Salt River and Gila River Indian Reservations. Known as Pima cotton, its discovery led to substantial acreage being devoted to the new crop in Arizona. Searching for additional acreage to devote to the crop, in 1917 the U.S. Department of Agriculture sent W.B. "Bill" Camp to California to scout out possible locations for cotton cultivation. Camp concluded that the San Joaquin Valley had some of the best soil and climate conditions in the country for cotton agriculture. Camp worked with farmers to establish test crops and investigated new varieties of cotton (Wilson and Leigh 1996).

WWI ended in November of 1918. This resulted in a temporary recession in the agricultural community as demand for farm products dropped precipitously. Prices soon rebounded as supplies were absorbed by the growing economy of the twenties. Camp's experimental cotton plots in Kern County continued. By 1921 these had become so extensive that USDA officials determined there was a need for a local experiment station. The Kern County Land Company leased a 77.24-acre parcel to Kern County for the purpose of conducting research on cotton corps, and on other crops that might be suitable for the local climate. Construction on the Shafter Research Station began in 1922 (Wilson and Leigh 1996).

Additional research led to the discovery of a new variety of long-staple cotton in the Mexican town of Acala. Named Acala cotton after the small village where it originated, by 1925 the Acala cotton variety became the consensus choice as the best variety for cotton production in California. This consensus became law on May 22, 1925, when California Governor Friend William Richardson signed the "One Variety Cotton Act"" which required growers to plant the Acala strain. The law spurred the growth of California's fledgling cotton industry, which now forms a major part of the state's agricultural economy. The success of the "one variety" policy resulted in an international reputation for the Shafter Research station, and procedures developed at the station in Kern County have been used in the Australian and Israeli cotton industries (Wikipedia undated).

The one-variety law guaranteed the quality of the seed and ensured that textile mills would pay a premium for a product whose source was known. Cotton ginners and textile mills were guaranteed a product that was a known quality. Seeds from other varieties of cotton were not processed in the same gin, thus preventing any unanticipated mixture of varieties. This led to the creation of a tremendous cotton industry in California, first centered on Kern County. The law stayed on the books until 1978, at which time demands for increasing diversification in the cotton industry began to result in changes to the one-variety concept (Constantine et al. 1993).

##### 5.5.1.3.4.3.6 *Diversification of Kern County Agriculture*

Cotton was the predominant crop in Kern County from the 1920s until the 1970s. After that time, diversification began to change agriculture in Kern County. Other changes came in this era, including the end of a strike by farmworkers in 1970 and the adoption of the California Agricultural Labor Relations Act in 1975. However, diversification of farming was always a Kern County hallmark.

The key to diversification of agriculture was the introduction of groundwater pumping starting about 1910. Gasoline powered pumps could easily and cheaply pump groundwater from underground aquifers. This freed small operators from the need for extensive infrastructure of canals that dominated the approach of larger operators. Farming colonies emerged in Edison, Arvin, Shafter, and McFarland. One of the most famous was an African American colony called Allensworth, founded in 1908 north of Wasco in Tulare County about 30 miles north of Bakersfield. The colony of Allensworth was ultimately unsuccessful. It lasted for about 20 years, hampered by issues with rail transportation and the death of founder Col. Allen Allensworth in 1914. Today, the town is a California State Historic Park (historynet.com undated; California Department of Parks and Recreation undated).

The cotton boom brought in many African Americans from the South to labor in the fields. However, many of the transplants did not stay long in fieldwork. They quickly left to join the rapidly expanding urban economy of California. Growers then turned to Chinese immigrants, who also did not show much interest in cotton harvesting. There were few Chinese available in California, due to the Exclusion Act of 1882. As time went on and the Chinese Exclusion Act became stricter, growers turned to persons of Japanese ancestry. By 1910 at least 30,000 Japanese were working in California's agricultural industry. This was about one-third of all farm laborers. A number of Japanese also purchased farmland. As owners, they diversified the agricultural economy by turning to fruit crops and vegetables. The success of Japanese farmers led to attacks and restrictions. This started with the Alien Land Act in California, adopted 1913. This was followed by the federal Immigration Act of 1924. Both of these led to a decline in the Japanese farm labor force (Berg 1976; Rast et al. 2007).

In addition to attracting a diverse labor force, Kern County attracted a number of growers and investors. One of the most successful was Joseph DiGiorgio, came to the area with vast capital and purchased tens of thousands of acres. DiGiorgio, whose holdings were primarily in the Arvin area, supplied produce for a grocery distribution network his family already owned on the East Coast. On the other end of the scale was Marin Caratan, who arrived from Croatia in 1918. He started as a dishwasher in San Francisco, amassed a small nest egg, and then started out with a small farmstead in Kern County. Others had long-time roots in California, going back many years. These included the Carver-Bowel family who owned a cattle ranch, the Dick Porter family who grew citrus, and the Fry family who grew everything from alfalfa to wheat (Beeman undated; Warnert 2014).

While the 1920s were the start of major cotton production in Kern County, citrus and vegetable crops also formed a substantial portion of agricultural production. Owners needed labor for the harvest, which in many instances was time critical. In the absence of other groups, growers turned to Filipino and Mexican labor. Because the Philippines was an imperial possession of the U.S., from 1898 to 1946 persons born in the Philippines were considered U.S. nationals. This proved advantageous to growers because U.S. nationals can reside and work anywhere in the U.S. without restrictions, although they are not eligible to vote. After the Philippines became an independent nation in 1946, persons born in the country after independence are citizens of that the Philippines and not U.S. nationals. Large numbers of Mexican laborers came to the U.S. starting after the Mexican Revolution of 1910. This influx continued through the prosperous 1920s when jobs in the fields were plentiful.

The 1930s were difficult years for agriculture as the depression curtailed production and lowered farm prices. Many Mexican laborers were "repatriated" to Mexico, meaning they were sent there under duress. Others left voluntarily. Filipino workers generally stayed put, since many of them were single men at some distance from their country of origin. The federal government tried to encourage Filipinos to return through the Filipino Repatriation Act of 1935. However, this did not result in many returnees. At the same time, a large influx of farmers from the Midwest came to California. Many of these were from the Dust Bowl area of Oklahoma and others were from the south. Known as Okies from Oklahoma or Arkies from Arkansas, these migrants joined the farm economy in Kern County as laborers or tenants on acreage leased from large landowners (archive.org undated; Hoffman 1973; Stein, 1973).

The two situations of large farms and the demand for labor set up conflict in the years after WWII. Large landholdings had been common in the San Joaquin Valley, dating back to the 19th century. As the years went on, the size of the landholdings increased as large corporations began to control more and more acreage. Much of this expansion in acreage was related to the development of oil production in the area. As corporations purchased land for oil and gas production, the surface portion of those lands was converted to agricultural use as soil conditions and water availability allowed. Increased agricultural development resulted in an increased demand for labor (Villarejo 1981).

In the 1960s, farm workers became increasingly concerned with labor conditions in the field. This was associated with the civil rights movement, which started with African Americans in the 1950s and extended to other groups as time went on. Kern County became the center of a protracted conflict between farm workers and growers starting in 1965. In that year labor activist César Chávez moved to Delano to start a union of farmworkers. He was not alone, bringing with him friends and family and relying on local support from the Mexican community. One area of support came from local Filipino farmworkers who had their own set of labor leaders, including Larry Itliong. In what came as a surprise to Chávez, the Filipino farm workers in the Delano area of Kern County went on strike against growers in 1965 shortly after his arrival. This set off a five-year struggle for recognition of the farmworker's union. This was a struggle that thrust César Chávez into the national and international spotlight and brought Kern County agriculture into prominence as the location of one of the greatest labor struggles of the 20th century (Rast 2007).

Significant events during the strike included a visit from Senator Robert F. Kennedy to investigate migrant farm worker conditions in 1966. Shortly after this visit, on March 17, 1966, Chávez and others began a 350-mile march to the state capitol in Sacramento, culminating on Easter weekend. This began a close association between Kennedy and labor leaders such as César Chávez and Dolores Huerta. Chávez's first public hunger strike began in February of 1968. As a presidential candidate Robert F. Kennedy visited Chavez in Delano at the end of the hunger strike in March. The labor strike continued until 1970, when the first grower signed a contract with the United Farm Workers. By July, more than twenty-eight growers had signed contacts, bringing the strike to an end (Rast 2007).

These events culminated in 1975 with the adoption of the California Agricultural Labor Relations Act. This law recognized the rights of farmworkers to organize and engage in collective bargaining. In 2008, the "Forty Acres" headquarters of the United Farmworkers in Delano was declared a National Historic Landmark. Chávez moved his headquarters from Delano to Keene, also in Kern County, in 1972. This second location, Nuestra Señora Reina de la Paz, means "Our Lady, Queen of Peace" in English and the compound is commonly called La Paz. On October 8, 2012, President Barack Obama issued a proclamation establishing the La Paz property as the Cesar E. Chavez National Monument. On the same day, the Nuestra Señora Reina de la Paz was designated a National Historic Landmark (NPS undated; Rast 2011).

#### *5.5.1.3.4.4 Theme 4: Water and Electrical Power Conveyance, 1902-1973*

Because the project corridor is a linear electrical feature, it crosses other linear features. The most ubiquitous of these linear features are roads and transportation routes, which are described in a separate theme. Water and electrical power transmission corridors also cross the corridor at numerous locations. Because of the importance of water and power to California history, these linear conveyance features have significant associations.

Two major water conveyance systems pass through or near the project corridor. The first is the California Aqueduct, which is part of the State Water Project (SWP). The SWP primarily serves urban and industrial customers in southern California, although agricultural users - primarily in Kern County - account for about thirty percent of all deliveries. The SWP serves the Tehachapi - Cummings County Water District which is in the project corridor. The second major project is the Central Valley Project (CVP), which is a federal project first planned in the 1930s. This project is primarily agricultural in nature, although about fifteen percent of CVP deliveries go to urban and industrial users. A major CVP conveyance infrastructure ends at Bakersfield, where the Friant-Kern Canal terminates at the Kern River. At the Kern River, the Arvin-Edison Canal begins. This serves the Arvin-Edison Water Storage District within the project area, which is a part of the Central Valley Project (Carle 2004).

Electrical conveyance is also an important aspect of the survey corridor history. This significance stems from the construction of two important hydroelectric power plants that generate electricity for Southern California. The first system is the historic Kern River No. 1 Hydroelectric System constructed from 1902-1907. The Powerhouse is located 20 miles east of Bakersfield on CA-178 and is constructed with reinforced concrete with a steel roof frame and galvanized roofing (Taylor 1993). The associated Kern River No. 1 66 kV Transmission Line pioneered the use of steel towers for long distance power transmission (Taylor 1993). The second is the Big Creek Hydroelectric System, constructed 1909-1929 which includes several powerhouses, conduit, dams and reservoirs on the San Joaquin River watershed upstream from Fresno. Power generated at Big Creek was transmitted through the Big Creek East and West Transmission Lines and Vincent Transmission Line to the Eagle Rock and Gould substations in Los Angeles for distribution into Los Angeles (Tinsley Becker and Crane 2012).

The period of significance for this theme begins in 1902 with the start of construction on the Kern Power Plant No. 1 and continues until 1973 when the Edmonston Pumping Plant on the California Aqueduct was finished, signifying substantial completion of the State Water Project.

##### *5.5.1.3.4.4.1 <u>Water Conveyance</u>*

Water conveyance is a key component in the development of California. By the 1970s there were 1,251 major reservoirs in California with nearly every significant river being dammed at least once (Reisner 1987). In 2000, Caltrans prepared a historic context for water conveyance systems in the state that serves as a valuable guide for the important associations these properties have with state history. The Caltrans context study also has useful information about property types associated with water conveyance features, ranging from those directly associated with the use and transportation of water itself to associated features such as camp sites, electrical transmission conveyance features, and transportation such as access roads (JRP Historical Consulting Services and Caltrans 2000). In the HBER study area, water systems are most importantly associated with farm irrigation after the arrival of American settlers after 1848, in the development of hydro-electric power, and the development of community water systems, for both local cities and towns and as far distant as Los Angeles.

#### 5.5.1.3.4.4.2 *State Water Project (SWP) - California Aqueduct*

The SWP is operated by the California Department of Water Resources. It was made possible by adoption of the Burns-Porter Act, formally known as the California Water Resources Development Bond Act, on November 8, 1960 (seecalifornia.com 2019). The SWP delivers water from the northern portions of the state where there is an abundance of the resource to the southern portion of the state where a majority of the population lives. More than two-thirds of Californians receive some portion of their water supply from the State Water Project. It consists of 29 dams, 18 pumping plants, five hydroelectric power plants, and 600 miles of canals (Carle 2004).

The backbone of the system is the Governor Edmund G. Brown California Aqueduct. The California Aqueduct extends 273 miles from the Sacramento Delta, through the San Joaquin Valley, and over the Tehachapi Mountains, where it splits into two branches at the border of Kern and Los Angeles Counties (Lloyd 2019). The east branch extends another 171 miles, for a total of 444 miles from the Sacramento Delta. The aqueduct includes more than 20 pumping stations, 130 hydroelectric plants, and more than 100 dams (Encyclopedia Britannica 2019). Channels along the aqueduct are typically 40 foot wide concrete-lined canals with a depth of 30 feet, supplying approximately two-thirds of the state population and 750,000 acres of farmland with water resources.

The project corridor crosses the California Aqueduct between two pumping plants. West of the corridor, about 7.2 miles up the aqueduct, is the Chrisman Pumping Plant. It operates in a series of sequential lifts in southern San Joaquin Valley with Buena Vista, Teerink, and Edmonston Pumping Plants to convey California Aqueduct water to and across the Tehachapi Mountains. Construction at Chrisman took place from 1966 to 1973. East of the project corridor, the California Aqueduct continues 5.8 miles to the Edmonston Pumping Plant. Constructed from 1967 to 1973, the Edmonston Pumping Plant provides the largest lift, nearly 2,000 vertical feet, in the SWP system. The plant’s two main discharge lines stair-step 8,400 feet up the mountain side to a 62-foot-high, 50-foot-diameter surge tank. Near the top of the lift, 140- foot diameter valves can close each discharge line in the event of a system rupture and minimize water flowing back into the plant below. From Edmonston, the water travels through a tunnel through the Tehachapi Mountains until it emerges on the other side at the Tehachapi Afterbay. At this point, SWP bifurcates into the West and East Branches. On the East Branch, the Alamo Power Plant generates electricity from the force of the water moving downhill (California Department of Water Resources undated).

The eastern end of the project corridor passes through the Tehachapi-Cummings County Water District (TCCWD), which is a State Water Project recipient. The TCCWD is a good example of the benefits offered by the SWP. The importation of water into the area provides water for agriculture and municipal use. Established by a vote of taxpayers in 1965, TCCWD consists of three groundwater basins (Tehachapi, Brite, and Cummings) where native groundwater served as a supply. Groundwater is supplemented by imported surface water from the SWP and recycled water originating at the California Correctional Institute (CCI) (Tehachapi-Cummings County Water District undated; Wikipedia undated).

The 850 Canal of the Wheeler Ridge - Maricopa Water District passes through the project corridor. The district is a contractor for SWP deliveries and was formed in 1959. The district receives SWP through a contractual agreement with the Kern County Water Agency (KCWA). KCWA was formed to contract with the State of California for delivery of SWP to 13 water districts in Kern County. Landowners in Wheeler Ridge - Maricopa approved construction of a water distribution system in 1967 and deliveries began in 1970. Like other water districts in the area, the goal of imported surface water supplies was a reduction of groundwater overdraft. Surface water travels to the district via the California Aqueduct (Wheeler Ridge-Maricopa Water Storage District undated).

The 850 Canal extends from southeast of the I-5/US 99 interchange to just north of Tejon Reservoir No. 1, a distance of approximately 5 miles. Water from the canal is distributed by the Wheeler Ridge-Maricopa Water Storage District to the adjacent agricultural fields. Occasionally, Tejon Ranch pumps water into the 850 Irrigation Canal from Tejon Reservoir 1 (Impact Sciences Inc. undated).

##### *5.5.1.3.4.4.3 Central Valley Project*

The Central Valley Project (CVP) is a federal water project that got its start during the Depression. Like the State Water Project, it is designed to transport water from the northern portion of California where it is plentiful to the southern portion of the state where it is scarce. It is a multi-purpose project that provides irrigation water to farmlands, electrical power, flood control, and salinity reduction. As the name implies, this project serves the Central Valley of California only and does not extend beyond the Sacramento and San Joaquin Valleys. Some CVP water serves urban uses in the San Francisco Bay area. About fifteen percent of CVP water goes to municipal and industrial use (Carle 2004).

The early history of the Central Valley Project is related to the California State Water Plan in the 1920s. In addition to agricultural use, the state plan also addressed saltwater intrusion in Suisun Bay in the Sacramento River Delta. The California legislature authorized what became the Central Valley Project as a state project in 1933. However, the state could not sell the bonds due to the economic conditions at the time. The project was then authorized as a federal relief project in 1935. President Franklin D. Roosevelt approved the plan in December of 1935. The first funding came in 1937 from the Rivers and Harbors Act. This set the stage for both cooperation and conflict between the USACE and the Bureau of Reclamation regarding leadership of the project. Much of the controversy related to a provision in the original 1902 US Reclamation act limiting benefits to properties of 160 acres or less. As a result, the project became an amalgamation of the USACE and the Bureau of Reclamation. The USACE constructed several divisions of the CVP. USACE projects authorized under the Flood Control Act of 1944 included Isabella Dam on the Kern River, New Hogan Dam, the Lings River Project, Success Dam, Terminus Dam, Folsom Dam, Black Butte Dam and New Melones Dam (Stene 2008; Simonds 1994).

The unit of the CVP closest to the project corridor is the Friant Division. Friant Dam was included for funding in the 1935 Rivers and Harbors Act signed by President Roosevelt in 1935. It was reauthorized in 1937. Construction on Friant Dam began in 1938 and was substantially completed during the war in 1942. Two canals extend from Friant Dam on the San Joaquin River, which impounds water in Millerton Lake. To the north is the short 36-mile Madera Canal which takes water north to Madera County. To the south is the 152-mile Friant-Kern Canal. Construction of the Friant-Kern Canal began in 1945 and was completed in 1951. It terminates at the Kern River in Bakersfield (Autobee 1994).

Components of the CVP have been determined eligible for inclusion in the National Register. The CVP multiple property nomination includes Friant Dam and the Friant-Kern Canal (FKC). Friant Dam is located on the San Joaquin River, northeast of Fresno, California. Completed in 1942, the dam is a concrete gravity structure, 319 feet high, with a crest length of 3,488 feet. Construction of the canal began in 1945 and was completed in 1951. Both Friant Dam and the FKC are considered contributing elements of the CVP multiple property listing and are considered eligible for inclusion in the National Register (Bureau of Reclamation 2010).

##### *5.5.1.3.4.4.4 Arvin-Edison Water Storage District*

Just before the terminus of the Friant-Kern Canal in the Kern River is the start of the Arvin-Edison Water Storage District Intake Canal at mile post 151.80 of the Friant-Kern Canal. Through a siph0n under the Kern River, this canal serves lands south of the Kern River in the Arvin-Edison Water Storage District.

The Arvin-Edison Water Storage District (AEWSD) was organized in 1942 to contract with the United States for water service from the Central Valley Project. The goal was to reduce overdraft conditions on the local groundwater aquifer by bringing in surface water supplies. Formation of the district also allowed landowners to receive a contract for federal power and to obtain a loan for the construction of irrigation facilities. Later, in 1962, AEWSD entered into an agreement with the Bureau of Reclamation for additional water supplies. This contract allowed the construction of several new facilities during the years 1964 through 1968.

The main feature of the AEWSD is the Arvin-Edison Canal System. This system consists primarily of the North and South Canals which are a continuous linear resource separated by the Sycamore Check Structure. The system begins with the AEWSD Intake Canal off the Friant Kern Canal. The Forrest Frick Pumping Plant pumps water from the Intake Canal to the North Canal Balancing Reservoir from where water flows to the North Canal. Groundwater is allowed to percolate at a number of recharge facilities. The North Canal Spreading Works is the first of these. At the Sycamore Spreading Works the South Canal begins at the Sycamore Check Structure. The Tejon Spreading Works is further south. The South Canal terminates at a turnout into the California Aqueduct (Bureau of Reclamation 2017).

The project corridor crosses the North Canal in one location and the South Canal in one location. The APE is adjacent to the Tejon Spreading Works. The Bureau of Reclamation determined and the California SHPO concurred in 2015 that the Arvin-Edison Canal System is not eligible for listing on the NRHP under Criteria A, B, C and/or D as either an individual resource or as a contributor to the larger AEWSD water delivery, recharge, and storage system (Applied Earthworks 2015).

*5.5.1.3.4.4.5* *Electric Power Conveyance*

The development of electricity as a power source is one of the most significant technological advances in history. It was a key element of the second industrial revolution which allowed light and power to assist humans in all their endeavors. A key contribution to this transformation was the perfection of alternating current, allowing power to be transmitted long distances. This freed industrial activities from the tether of having to locate close to a power source such as the water mills that powered the textile industry in the first industrial revolution (SCE 2015).

Property types associated with electric power conveyance start with fuel supply systems, such as oil, gas, coal, or water used in hydroelectric systems. These are the source of power for electrical generating systems, the heart of which are turbines that convert the raw power into mechanical energy. In turn, this motion is transformed into electrical energy by a generator. Once generated, the electrical power can be sent through an electrical transmission system to its ultimate destination. Transmission requires the power to be stepped up to a higher voltage at the start of its journey through the use of transformers. Likewise, the power has to be stepped down when it reaches its destination at a substation where it is transformed into lower voltages suitable for local distribution systems. There are a number of other properties associated with the main systems of fuel supply, generation, and transmission such as administrative buildings and roads (Meyer 2014).

Early electric power development was an accomplishment of private enterprise. Local governments assisted by providing franchises to power companies, thus guaranteeing a market. By the year 1900, the Edison Electric Company, Pacific Light & Power Company, San Joaquin Power & Light Company, and the Pacific Gas & Electric Company were the pioneering commercial entities for the generation and distribution of electrical energy in California. In 1909, Edison Electric Company reincorporated as Southern California Edison (SCE 2015).

The Kern River became the center of several important hydroelectric developments that supplied power to the rapidly growing southern California area. One of the most significant early power generation projects was the Kern River No. 1 Powerhouse, completed in 1907. Water is diverted at Kern River No. 1 Diversion Dam (also known as Democrat Dam) and intake structures located on the Kern River approximately 10.2 miles upstream of the powerhouse where river water quickly fell from the heights of the Sierra Nevada Mountains (Taylor undated).

First surveyed in 1902 by the Edison Electric Company, the mountain canyon was an excellent location for power generation from rushing water. The first powerhouse at the location was part of an integrated system completed by the Edison Electric Company. A water conduit, consisting of a flume, sandbox, forebay and one penstock connects the intake at the dam with the powerhouse. At the intake, the flow of water is controlled by an intake gate house. After flowing through a long flume, the water terminates at a sandbox where suspended material such as sand and sediment can be sluiced out. The water then enters a series of tunnels covering eight miles that terminates at a forebay. This small reservoir controls the flow of water into the penstock for delivery into the powerhouse. Water is fed through the turbines to generate electricity. While the powerhouse was the most imposing structure at the site, several ancillary buildings such as residences, sheds, and storage sheds were completed by 1907 (Mikesell 1988).

After generation at the powerhouse, the electricity traveled a 117-mile route to Los Angeles. This power conveyance route followed the same basic north-south transportation corridor through the central valley of California through Tejon Pass to reach the market in Los Angeles (SCE 2015).

Constructed in 1907, the Kern River-Los Angeles 66 kV (KR1) Transmission Line was the first transmission line erected with all steel transmission towers in the company's service territory, and, at the time of construction, was one of the earliest transmission lines within California to employ steel towers at the distance of 117-miles. During construction, and early in its operation, electrical engineering periodicals designated the KR1 line as one of the longest transmission spans on the North American Continent conveying electricity at 60,000-volts or 60kV, a high voltage for the time. The KR1 Transmission Line was designed to transmit electricity from the Kern River No. 1 Powerhouse at Kern River Canyon, through the Tehachapi Mountains and the Santa Clarita Valley, and into Los Angeles where the Los Angeles Steam & Transformer Plant No. 3 received the electricity (SCE 2015).

A second early power plant was constructed on the Kern River in this same time period. This was the Borel plant, a project of the Pacific Light & Power Company. PL&P was owned by Henry Huntington who needed ample supplies of power for his Pacific Electric trolley lines in Los Angeles. He acquired the power site for Borel in 1902 when he purchased it from the Kern River Company. The plant was named for Antoine Borel, a partner of Huntington in the Pacific Electric Railway. The Borel plant began operation in 1904. Power from the plant reached Los Angeles via a 127-mile 55kV line. In 1917 PL&P merged with Southern California Edison (Weintraub 1990; Mikesell 1998).

These early transmission lines from Kern River spanned through thousands of acres of undeveloped land and through the fledgling communities near the Tejon Pass and the Santa Clarita Valley before arriving at their destinations in the city of Los Angeles.

In later years, the same basic transportation corridor was used for additional lines as growing demand in Los Angeles required more power resources. A major power generating operation at Big Creek in the upper San Joaquin River sent power along this same general north-south path to Los Angeles. Big Creek is a tributary to the San Joaquin River and the heart of the Big Creek Hydroelectric System which is now a National Register listed historic district. Construction started in 1909 and the initial development phase continued until 1929. The project ultimately consisted of six major reservoirs, 27 dams, nine powerhouses, and a vast array of supporting infrastructure (Pollack et al. 2015).

In 1913, the Big Creek East and West Lines were installed and energized. These transmitted power from the power plant at Big Creek to the Eagle Rock Substation in Los Angeles. These were 150kV lines that share a small portion of the ROW with the Kern River line. Ten years later, in 1923, the east and west lines were upgraded to 220Kv. Later, in 1927, Southern California Edison constructed the 224-mile Vincent Transmission Line from Big Creek to the Gould substation in Los Angeles. This was known as the Big Creek No. 3 line (SCE 2015).

The nomenclature of these transmission lines has changed slightly since construction. This conforms to current practice that refers to transmission lines by the starting and ending point. Paths of the Kern River - Los Angeles, Big Creek East and West Lines, and the Vincent Transmission line cross the HBER project corridor. These segments are described below using current nomenclature.

Gorman-Kern River # 1 is a modern 66 kV transmission line in an early right-of-way. A 51.4-mile segment is located in the corridor of the original 117-mile Kern River-Los Angeles (Kern #1) 60kV transmission line. Gorman-Kern River # 1 extends from the Kern River # 1 Powerhouse (1907), and extends along CA-178, through agricultural fields east of Bakersfield, to Gorman Substation (1950) on Gorman Post Road.

Another line in the original Kern - Los Angeles No. 1 ROW is the Correction-Cummings-Kern River No. 1. This is a modern 66 kV transmission line that extends 41.8-miles in Kern County from Kern River No. 1 Powerhouse (1907) in Bakersfield, to Correction Substation (2000) in Tehachapi, to Cummings Substation (1950) in Tehachapi. Correction-Cummings-Kern River # 1 runs north-south from Kern River No, 1 Powerhouse to one mile south of the intersection of Millux Road and Tower Line Road in Arvin, and then travels east-west through the Tehachapi Mountains to Cummings Substation.

There are three Magunden-Pastoria lines in the project corridor: Nos. 1, 2 and 3 (1925). These are in a 30-mile segment of the 241-mile Big Creek Hydroelectric System East and West Transmission Line Corridor. These transmission line segments initiate at the Magunden Substation on Edison Highway in Bakersfield and terminate at Pastoria Substation, .5-miles south of Edmonston Pumping Plant Road. These closely parallel the Golden State Highway at a distance of approximately 5-miles east.

There are two other transmission line segments from the 1920s in the project corridor. The Magunden-Mesa Transmission Line (Antelope-Magunden No. 1 - 1928) and Antelope-Magunden No. 2 220kV line (1927) are segments of the Vincent 220kV Transmission Line, part of the Big Creek Hydroelectric System. The entire 59-mile transmission line extends from Magunden Substation (1926/1950) in Bakersfield to Antelope Substation (1953) in Lancaster. Both lines are in the same transmission line corridor that runs at a west-east diagonal from Magunden Substation through the Tehachapi Mountains.

Also present within the project corridor are access roads for the Vincent 220kV Transmission Line. These are a series of unpaved one-way access/spur road segments that provide access to the historic 1920s transmission line. The roads were constructed as access routes to the historic Vincent 220kV Transmission Line. Today, the access roads are used to service the Antelope-Magunden Transmission Line Nos. 1 and 2, modern-day segments of the historic line, and portions of the Correction-Cummings Transmission Line.

##### *5.5.1.3.4.5 Theme 5: Fort Tejon and The Tejon Ranch Company, 1843-1970s*

Fort Tejon was a short-lived military outpost from 1854 to 1864 that guarded the important north-south supply route in central California. The outpost also served to keep the peace between Native Americans and recent arrivals looking for new locations of precious metals in the years after the Gold Rush. After the Fort was abandoned, noted military leader Edward F. Beale acquired vast amounts of land in the vicinity and eventually assembled one of the largest private land holdings in California. Known as Tejon Ranch, these lands are now controlled by a publicly traded corporation. In 1940, the Tejon Ranch donated the site of Fort Tejon to the State of California as a preservation measure; it became a State Historical Park in 1962. In 2008 the Tejon Ranch Company reached an agreement with several environmental groups to create the Tejon Ranch Preserve on about 240,000 acres of the ranch. This agreement opened the remainder of the property for residential and commercial development.

The period of significance for this theme begins in 1843 with the establishment of the Rancho Castac land grant which later became part of Tejon Ranch and continues until the early 1970s after completion of I-5 through the ranch as well as completion of the SWP across ranch property.

###### *5.5.1.3.4.5.1* *Fort Tejon*

Fort Tejon is located on a section of the old Rancho Castac land grant. The Rancho Castac land grant was awarded to José Maria Covarrubias in 1843 by then Governor Micheltorena, covering five square leagues. At the time of the establishment of Fort Tejon, the title of the land grant was under litigation by a commission established by the California Land Act of 1851 to determine the status of Spanish and Mexican era land grants in California. The title to the Castac land grant was eventually confirmed in 1866 (Crowe undated).

In addition to settling claims to early land grants, in 1851 the government reached out to Native Americans living in the central valley of California to protect their land claims. President Millard Fillmore appointed a Board of Peace Commissioners that met with 11 tribes in the southern San Joaquin Valley, including Yokuts and Kitanemuk-speaking peoples in the Tejon area. A total of 18 treaties were signed up and down the central valley that year. However, none were ever ratified by the U.S. Senate. One of these treaties was signed on June 10, 1851, at Camp Persifer R. Smith in the heart of Tejon country (Johnson undated; Crouter and Rolle 1960).

Fort Tejon and the Tejon Ranch are closely associated with Edward F. Beale (1822-1893). Beale was a graduate of the Philadelphia Naval School and served in the navy from 1837 to 1851. During that time, he ended up in California during the War with Mexico and participated in the Battle of San Pasqual in 1846. Beale made several trips across the U.S., including one to carry ore from California back east in 1848 to prove the discovery of gold in the territory acquired from Mexico. He was promoted to Lieutenant in 1850 and retired in 1851 (Thompson 1983).

In 1853, President Millard Fillmore appointed Beale as Superintendent of Indian Affairs for California and Nevada. Also, in 1853, on March 3, Congress authorized the President to create five “military reservations” in California, Utah, or New Mexico. Upon his return to California in 1853, by September Beale designated the Sebastian Military Reservation centered on Tejon Canyon. This reservation, also referred to as the Tejon Reservation, was used to protect Native Americans from recent arrivals. Several tribes were relocated there for their protection. Beale named the reservation after U.S. Senator William K. Sebastian of Arkansas, Chairman of the Indian Affairs Committee (Locklear 2015).

Fort Tejon was established by the U.S. Army in 1854 within the Sebastian Reserve, about fifteen miles to the southwest of Tejon Canyon. The main purpose of the fort was to protect and control the Indians who were living on the Sebastian Reservation, and to protect both the Indians and white settlers in the valleys of California from raids by Indian groups of the desert regions to the east. Brevet Major James L. Donaldson chose a site within Cañada de las Uvas, known as Bear Springs Camp or Traveler’s Rest. This was considered the most ideal location for the post as it was the most feasible route north and south at the time (Harvey undated).

In August 1854, the detachment of the First Dragoons, under the leadership of First Lieutenant Thomas F. Castor, arrived at the appointed site and established Fort Tejon. Occupation of Fort Tejon lasted from 1854 until 1864 and was considered “the finest military post in the Far West.” Approximately 225 troops lived at the Fort, which included 15 buildings constructed at a cost of more than $500,000. A total of 40 buildings were built during the lifespan of the fort, typically consisting of a rectangular footprint and either adobe or wooden-framed construction. These buildings included a hospital, quartermaster’s store, headquarters, commissary, guard house, officers’ quarters, long barracks, and stables/corrals (Kelly and Stammerjohn undated).

The presence of the fort caused a significant boost to the local economy with a small settlement known as Fort Tejon established near the post and the development of the Overland Mail Company station at the post (California State Parks 2017). In January 1857, an earthquake caused extensive damage to many of the fort’s structures. The quake had its origin with the San Andreas Fault which passed near the fort, to the southeast across Antelope Valley. In 1857, Rose Station became a trading post and water stop for stagecoaches in the Tejon area, as well as a hub for social activities. In 1859, the Butterfield Overland Stage established two stations on Tejon Ranch, located at Fort Tejon and Comanche Point, known as the “Sink of Tejon.” The outbreak of the Civil War further changed the dynamics of the Fort, with the Dragoons leaving Fort Tejon to participate in the war in the east during the summer of 1861 (Harvey undated). The Fort was abandoned briefly at this time until 1863, when it was reactivated by the California Volunteers when the Owens River Valley Native American populations were relocated to the Tejon Reservation. However, within a year, the Volunteers were ordered to move elsewhere, and the Fort was formally closed on September 11, 1864 (Castillo undated). This caused the local economy that had developed around the Fort to collapse, with many merchants losing profit.

###### *5.5.1.3.4.5.2 Rancho El Tejon and Tejon Ranch*

Four Mexican-era land grants would eventually form Tejon Ranch, including Rancho El Tejon, Rancho Castac, Rancho Los Alamos y Agua Caliente, and Rancho La Liebre that includes large parts of the western Sierras. Rancho El Tejon was approved as a land grant in 1843 but was only briefly inhabited by a worker hired by the grantee, who lived among the Indian rancherías in 1845 to 1846 (Harvey undated). Edward F. Beale, a naval officer and eventual owner of Tejon Ranch, first purchased Rancho La Liebre in 1855. William C. Walker granted the deed to Beale's wife, Mary Edward Beale. Ten years later, in 1865, Beale purchased Ranch El Tejon and Rancho Los Alamos y Agua Caliente. The Rancho Castac land grant was sold several times before it was transferred to General Edward F. Beale in 1866 (Crowe undated). This last acquisition created Tejon Ranch, amounting to over 269,000 acres at a cost of $90,000 (Tejon Ranch Company undated).

Edward F. Beale, known by the nickname “Ned,” was a national figure in 19th century U.S. military history and later became one of the largest landowners in California (Wikipedia undated). Beale is known to many as the path breaker in 1857 on the Beale Wagon Road along the 35th Parallel travel route to California. He is also well-known as a leader in an experiment by the U.S. Army to use camels as pack animals in the West (Stammerjohn undated). The Cross and Crescent of Tejon Ranch was recorded in Kern County as a brand in 1868 (Tejon Ranch Company undated). For the most part, Beale was content to be an absentee landlord. He purchased the Decatur House across the street from the White House in 1871, and it became the home for political meetings and lodging for prominent visitors to the nation’s capital. From 1876 to 1877 Beale was the ambassador to Austria-Hungary. In his later years, Beale was content with yearly visits to the Tejon Ranch and spent the majority of his time at his horse farm in Ash Hill, Maryland, which he purchased in 1875 (Morton III 1971; Owens 1974).

By the mid-1870s, the Tejon Ranch area was being used primarily as a sheep ranch, with many of the remaining structures from Fort Tejon used for various ranch operations, as well as living quarters for ranch families working for Beale (Ptomey undated). A number of Native Americans were living on the ranch at this time. Beale allowed them to fence in small tracts of land on which they raised mostly barley and wheat, and in some cases planted fruit trees and vineyards (Crowe undated). In the 1880s, the economy of the Tejon Ranch turned more to cattle. By the turn of the century, fruit growing activities on the ranch had increased to include oranges, figs, alfalfa and vineyards. Beale passed away in 1893 and management of the Ranch was passed down to his son Truxtun Beale. In 1911, a group of businessmen, led by Harry Chandler and M.H. Sherman and known as the Tejon Ranch Syndicate, bought the ranch (Tejon Ranch Company undated).

The businessman included Harry Chandler, Moses H. Sherman, Otto F. Brant, William H. Allen, Stoddard Jess, J. M. Elliot, Hobart J. Whitley and Eli P. Clark. They struck an agreement with Truxtun Beale to purchase the Tejon Ranch for $3 million. The deal called for the group to pay $1.5 million in cash and for Beale to hold a mortgage for the remaining $1.5 million, which would be payable after one year. The group formed a syndicate, which sold 30 shares for $50,000 each, half in cash and half to be paid through promissory notes. Later investors included William G. Kerchhoff of the San Joaquin Light and Power; R. C. Gillis of the Santa Monica Land and Water Co., F. X. Pfefinger, Treasurer of the Los Angeles Times, Harvey S. Firestone and J. Benton Van Nuys (Sherman Library and Gardens 2019).

The investors hoped to make the ranch profitable by improving the cattle operations and diversifying agricultural operations. By 1916, however, the ranch faced a financial crisis. Neither the cattle nor farming operations proved as lucrative as expected. Coupled with the failure of many investors to pay their $25,000 promissory notes, the group faced foreclosure for failure to pay the mortgage. To save the venture, Chandler and Sherman agreed to buy out the mortgage. Chandler's Times-Mirror Corp assumed one half of the mortgage and Sherman assumed the other. Sherman sold all but $50,000 to First National Bank of Los Angeles (later Security-First National Bank), Title Insurance & Trust Company of Los Angeles and Pacific Mutual Life Insurance (Sherman Library and Gardens 2019).

During this period of financial crisis, there was a conflict regarding occupation of the Tejon Indian Tribe on the property. Members of the tribe had continued to occupy Tejon Canyon through the years and worked for the ranch. After the sale to the Tejon Ranch Syndicate, the government tried to set aside lands for tribal members starting in 1914. The government conducted a census of tribal members in 1915 and set aside some lands from the public domain for tribal use in 1916. However, these lands proved inaccessible and unsuited to either settlement or agriculture (Locklear undated).

In 1920, the federal government filed suit in U.S. district court in an attempt to establish title for the Tejon tribe to a portion of the Tejon Ranch. This case was dismissed in 1923 on the grounds that the 1851 California Claims Act had been the proper venue for addressing land claims. Since the tribe had not filed a claim at that time, the district court ruled that its claim was barred. This decision was upheld by the Ninth Circuit Court of Appeals that same year. The federal government then appealed to the U.S. Supreme Court, which upheld the lower courts in 1924. The Supreme Court ruled that the Tejon Tribe did not have a valid claim to any lands that were part of the Ranch (Locklear undated).

The government continued to pursue land for the tribe though the 1920s. However, ranch owners refused to sell any parcels for use by the tribe. The owners continued to allow tribal members to live on the land and give them preference when hiring for ranch work. A lease that allowed ranch lands to be used for a school was executed in 1920; this lease continued until the school ceased operating in 1948 (Locklear undated).

During the economic crisis of the 1930s, the Ranch had continued difficulty paying its mortgage. In 1936, the Pacific Mutual Life Insurance Company and Security Pacific Bank demanded foreclosure of the property. As a result, the Tejon Ranch Company was incorporated and issued bonds. Tejon Ranch, Inc. turned to oil leases on a portion of the property which insured liquidity. By 1939, Tejon Ranch emerged from the crisis and continued to have a major presence within Kern County, from agricultural activities, mining, oil drilling, and other leased activities (Tejon Ranch undated; Sherman undated).

The economic crisis also led ranch owners to dispose of the historic core of Fort Tejon to the state of California for protection as a historic site. A 1935 fire had damaged the Officers Quarters. In 1936, Olaf T. Hagen of the NPS prepared a report on the historic site. Later that year, the location of Fort Tejon was listed as California Historic Landmark no. 129. Henry F. Withey prepared documentation of the site in 1937 for the Historic American Buildings Survey. In 1940, ranch owners and the state of California reached an agreement to deed a seven-acre portion of the ranch containing the old fort to the state (Cullimore 1949; Withey 1937 and 1940).

Between 1940 and 1955 Tejon Ranch donated an additional 199 acres for the park. A major earthquake in 1952 caused damage to the Fort and to the ranch headquarters. That same year, U.S. Route 99 through the ranch and near the fort was expanded to four lanes. In June 1962 the park was officially classified and renamed Fort Tejon State Historic Park. The fort was listed on the NRHP in 1971. In the mid-2000s a second donation of property from a private landowner added an additional 442 acres to the park. The Department of Parks and Recreation owns the majority of the area associated with the garrison portion of the Fort Tejon complex. Portions of the site including the quartermaster facilities and storehouses are not state owned property (Lentz-Meyer 2015).

Several changes starting in the 1960s brought the historic period to an end. The most dramatic of these came in 1963 with construction of I-5 near the fort site. This eight-lane freeway had a significant impact on the site. Two years later, in 1965, construction began on the A.D Edmonston Pumping Plant for the California Aqueduct in Tejon Ranch. Edmonston is the largest pumping plant in the State Water project, ten miles of pipe cross the Tejon Ranch going to and from the plant. The pumping plant began partial service in 1971 and was fully completed in 1973 (Tejon Ranch Company undated).

More change came at the end of the 1990s. In 1997 the Time Mirror Company, publisher of the Lost Angeles Times announced it would sell its 31% interest in the Tejon Ranch Company. This ended an association with the publishing empire dating back to 1911 and Harry Chandler. This sale to two large investment firms coincided with a new five-year business plan for Tejon Ranch with an emphasis on commercial real estate along the I-5 corridor and eventually residential housing development on the ranch. Several changes quickly followed. In 1999, the 51-acre Petro Travel Plaza opened at the junction of I-5 and US 99. The master plan for Tejon Ranch identified other large commercial and residential projects that same year: Tejon Ranch Commerce Center, the Centennial planned community, and the Tejon Mountain Village planned community (Starvo 1997).

The increased pace of development led to conflict with environmental groups concerned with protecting the natural habitat of the area. In 2003, the Tejon Ranch announced a new vision for the area by working with the Trust for Public Land California to create a wildlife corridor through the property. The goal was to protect wildlife habitat as plans for large housing developments went forward. It turned out this was just the opening step in a process that culminated in 2008 conservation agreement between Tejon Ranch and several environmental groups. This landmark document called for the preservation of up to 240,000 acres of land for conservation while allowing residential and commercial development to move forward on 30,000 acres (Kelley 2003; Tejon Conservancy undated).

#### 5.5.1.3.5 Research Design

The following research design is an overview of expected resource types and research topics, identified through background research, which informed site recordation and presence of resources within the GKR Project alignment. Future archaeological research within the area has the potential to address research questions regarding settlement patterns, site structure, subsistence strategies, trade and distribution networks and tool technologies. Questions for the GKR Project have been selected to contribute to the context and understanding of the prehistory and history of California. Based on the literature review, research questions fall into several prehistoric and historic domains.

##### *5.5.1.3.5.1 Prehistoric Research Domains*

###### *5.5.1.3.5.1.1 Prehistoric Site Types*

The prehistoric site types that are most likely to be identified within the Project area include: lithic scatter, artifact scatter, bedrock milling station, quarry, rock art, trail, rock feature, rock shelter, temporary camp, and habitation. Site definitions implemented for the Project are defined as any concentration of three or more artifacts, with at least two different artifact classes represented (e.g. debitage and ground stone, or debitage and a historic can) or a single feature within a 10 × 10 m area bounded by a 30-m buffer of no artifacts.

###### *5.5.1.3.5.1.2 Prehistoric Research Topics*

The review of previous research identifies a wide range of prehistoric research topics that pertain to the GKR Project vicinity. These topics fall under two general domains: chronology, and subsistence and settlement patterns. The domains and corresponding topics discussed below do not represent the full range of research interests or opportunities for the resources within the GKR Project APE/API; instead, these examples were chosen to demonstrate the current direction of contemporary research.

###### *5.5.1.3.5.1.3 Prehistoric Chronology*

One of the most important prehistoric research goals in the GKR Project alignment is the refinement of chronological frameworks. While continued research within SSJV and the Transverse Range have added to the current chronological timeline, the relative paucity of sites located within the study area still limits current knowledge for a complete chronological framework. Research that might yield chronometric information can make a valuable contribution to the archaeological record of the study area. Therefore, sites in the proposed Project APE/API that contain diagnostic artifacts (e.g., projectile points, ornaments such as beads, and artifacts made of obsidian) and archaeological remains that can be radiometrically dated could provide an opportunity to verify and expand the known parameters of cultural patterns currently defined in the SSJV and the Transverse Range. Buried sites more often contain and preserve materials that are suitable for radiometric dating, particularly given that a large percentage of the surface contexts in the proposed Project APE/API have been heavily disturbed by agricultural activities. A site that contains organic cultural remains that are suitable for radiocarbon dating could help refine the regional chronological framework. The discovery and radiometric dating of archaeological deposits in the study area, particularly deposits from the Paleo-Indian, Early Archaic, and early Middle Archaic periods, would provide important new information to the archaeological record in the SSJV and the lower Transverse Range.

At prehistoric sites throughout southern Kern County and northern Los Angeles County, chronometric data generally derive from time-sensitive artifacts (e.g., projectile points, beads, and ceramics), physically dateable artifacts (e.g., obsidian), and organic remains (dateable through chronometric assay). Time-sensitive and dateable artifacts can occur in surface and subsurface contexts, the former sometimes being less reliable than the latter in terms of dating archaeological components. Dateable organic remains (e.g., bone, shell, fiber, loose charcoal) can be acquired from midden deposits or, in the best examples, from buried features like hearths. In any case, sites that have dateable items or remains can be placed at least tentatively within an existing temporal framework, be it local or regional, and used to compare and contrast temporal adaptive patterns in human behavior. For the most part, sites that can be dated have greater overall data potential than undated sites because they can be placed in time and can help refine the understanding of long-and short-term changes in prehistoric human adaptation.

Within the project area, the following chronology-associated datasets may be relevant to establishing temporal affiliation:

- Sites with little disturbance either vertically or horizontally to identify clusters, patterns, and associations of datable artifacts within a surface scatter.
- Identification of datable loci or areas of activity that can be attributed to a single individual or a single event, such as a single broken pot or a reduction locus and/or tool production locus arrayed around a single point of origin.
- Sites with identifiable chronological markers or datable artifacts that may be analyzed.
- Sites with evidence of buried cultural materials, either through surface expression of specific features (e.g., heated-rock cooking features), or sites that fall on landforms with evidence for or a high probability of containing buried cultural deposit, such as sand shadows, sand sheets, and sand dune environments or relic remnants of such environments.
- Analysis of these sites on a landscape scale.

*5.5.1.3.5.1.4 Subsistence and Settlement Patterns*

Subsistence is one of the most basic of human needs having a direct effect on human behavior. Prehistoric subsistence procurement activities consist of any number of variables including site location in relation to landform, water supply, and raw materials; site size; site function; and duration of occupation. Material culture, such as lithic and ground stone tools, ceramics, and faunal and botanical remains, provide data representative of subsistence-related activities and strategies. Archaeological research on prehistoric settlement and subsistence patterns in the GKR Project area has focused on the Upper Archaic and the Emergent periods, because relatively little information exists for the Paleo-Indian and the Lower and early Middle Archaic periods. Although fluted projectile points, blade tools and cores, and other artifact types indicative of Paleo-Indian occupation have been found around the Tulare Lake Basin and in a few other isolated locations in the SSJV, the Tulare Lake materials are the only finds with an identifiable context. Fluted points are commonly assigned to the Big Game Hunting Tradition of the Paleo-Indian period, which is associated with a subsistence focus on large game animals (megafauna) that were still present in the area during this early time period.

After the Paleo-Indian period, the archaeological record in the proposed Project area becomes sparser. Evidence of human occupation in the Early Holocene, during the Lower Archaic, consists mostly of a few surface finds of items such as stemmed projectile points and flaked crescents; most of these occur around the lake basins in the SSJV. The only archaeological deposit radiometrically dated to this period was also associated with these lake basins and was identified in deeply buried soil along the ancient shoreline of Buena Vista Lake at CA-KER-116. This deposit produced three flaked crescents and radiocarbon dates on freshwater mussel shell of between 9,175 to 8,450 B.P. (Fredrickson and Grossman 1977; Rosenthal et al. 2007).

Recent studies of settlement and subsistence practices have concentrated on attempting to explain apparent archaeological evidence for a rapid and continuous increase in population beginning in the Upper Archaic and extending through the Emergent period. To explain this apparently rapid increase in population beginning in the Upper Archaic period, studies of settlement and subsistence practices during the last 25 years have concentrated on theoretical concepts such as intensification, demographic forcing, optimality, and resource depression, to analyze and better explain the changes apparent in the archaeological record during this period (Rosenthal et al. 2007). Patterns of mobility are also of research interest in the study of prehistoric settlement and subsistence practices. Because there appear to be more sites in the archaeological record dating to the Upper Archaic and Emergent periods than to the Middle or Lower Archaic, it is generally interpreted that population density in the valley was increasing during these later periods. By the end of the Emergent period, however, relatively large populations likely faced greatly reduced procurement territories and a consequential need to intensify resource usage within this reduced procurement area (Binford 1980). The mobility of the foraging group would likely be reduced because of surrounding population pressures. More limited mobility would likely induce a different subsistence strategy, labeled by Bettinger (1991, 2001) as a "processor strategy" resulting from diminishing search time, increasing processing time, and the need for using lower quality resource patches. The archaeological record in the SSJV is currently inadequate to allow analysis to identify or verify such possible shifts in patterns of prehistoric mobility in the area.

Within the project area, the following chronology-associated datasets may be relevant to establishing settlement strategies and subsistence:

- Chronological data for the sites being analyzed to examine the range of subsistence and settlement behaviors occurring within a specific time period and to identify changes through time.
- The identification of specific tools or sets of tools that reflect specific procurement or processing activities.
- A full range of site types that are located within representative environmental settings exploited by the prehistoric populations being characterized.
- Analysis of these sites on a landscape scale.

*5.5.1.3.5.2 Historic Research Domains*

*5.5.1.3.5.2.1 <u>Historical Resource Types</u>*

Historical resources are defined as any building, structure, object, site, or isolate at least 50 years of age, or less than 50 years old with exceptional significance, or having Native American religious significance. Certain resource types may be associated with specific ethnic groups within the historic-period (e.g. unpaved trails and Spanish or Mexican explorers, wagon roads and early American settlers, railroad lines and Chinese Historic. Historic resource attributes may include, but are not limited to, the following:

- Buildings and structures of residential, commercial, industrial, and government use
- Unpaved and paved roads, including wagon trails, auto highways, any transportation or travel pathways, historic period trails, mining routes, or other
- Water and electrical power conveyance systems, including canals and transmission lines
- Trash pits, privies, wells, and associated artifacts, surface dumps, and artifact scatters
- Isolated artifacts or isolated clusters of artifacts (metal cans, glass bottles, ceramic vessels, etc.)

##### 5.5.1.3.5.2.2 <u>Historical Resource Themes</u>

Historic archaeological sites and historic-era built environment resources shall be analyzed by the historic themes identified above in Section 5.5.1.3.5.2.2.

#### 5.5.1.3.6 Cultural Resources Methods

##### *5.5.1.3.6.1 Archaeological Methods*

##### *5.5.1.3.6.1.1 <u>Records Search Methods</u>*

A records search was conducted utilizing the ArcGIS Online (AGOL) database, which is maintained by SCE. SCE maintains a subscription with the California Historic Resources Information Center (CHRIS), Southern San Joaquin Valley Information Center (SSJVIC) and South Central Coastal Information Center (SCCIC). The subscription area encompasses the entire geographic boundaries of the Project area, is updated every six months, and includes the following datasets: resource records in PDF format and boundaries in geographic information system (GIS); reports boundaries in GIS format; and resources and reports database spreadsheet with resource attributes and bibliographic information.

Under the terms of the subscription, SCE's CHRIS Access and Use Agreement, and the California OHP's Electronic Data Subscription Standard, SCE maintains these data within an AGOL database, performs internal record searches using subscription datasets, and shares said data with authorized and allowable users. These data sets were used to conduct a records search for the Project.

##### *5.5.1.3.6.1.2 <u>Native American Coordination</u>*

The Native American Heritage Commission (NAHC) maintains two databases to assist cultural resources specialists in identifying cultural resources of concern to California Native Americans. On January 23, 2020, the NAHC was contacted to obtain information about known cultural and tribal cultural resources and request a list of Native American tribal representatives who may have a cultural affiliation with the Project area. The NAHC responded on February 13, 2020, stating that the Sacred Lands File (SLF) database resulted in negative results for previously identified sacred sites in the vicinity of the GKR Project alignment. The NAHC also provided a list of 26 Native American groups or individuals that are culturally affiliated with the GKR Project area. See Appendix E for NAHC response.

##### *5.5.1.3.6.1.3 <u>Archaeological Survey</u>*

Fieldwork and resource inventory included an intensive pedestrian survey. Crews conducted an initial survey of the private lands within the APE/API over four fieldwork sessions in 2017 (May 8 – 12, May 15 – 19, May 22 – 26, and May 30 – June 3, 2017). Surveys of federal and state parks lands were completed once permits were obtained (June 28, 2017 and August 15, 2017). For this project, a three-to-four-person crew performed the survey by implementing 15-meter parallel pedestrian transect intervals within a 300-foot corridor of the existing alignment, unless the corridor was too steep or otherwise unsafe for such a level of survey. Spacing was reduced to 3- to 5-meter intervals within an identified archaeological site. GPS data were recorded for all resources, previously recorded or new, which were then uploaded to AGOL. Areas not included in the survey have been noted, reported, and included on coverage maps in the Cultural Resources Technical Report.

Survey crews were provided a variety of information for use in the identification of cultural resources during fieldwork. They received a streamlined version of the work plan and instructions on how to conduct fieldwork and resource recording protocols. Crews were trained on the health and safety plan for the project, and a hard copy of the health and safety plan accompanied all vehicles for immediate reference. Cultural history and ethnography information was also be provided for relevant geographical areas. Daily digital survey summaries were sent electronically to track the progress, condition, and findings of the survey.

*5.5.1.3.6.1.4 National Register and California Register Evaluations*

Recommendations on NRHP/California Register of Historical Resources (CRHR) eligibility based on surface manifestations of features and visible artifact assemblages have not been made at this time. When the engineering design for the GKR Project is finalized, all resources that are still located within the APE/API and that cannot be avoided during construction would then be evaluated for their integrity and be recommended eligible or not eligible; alternatively, resources would remain unevaluated where eligibility recommendations cannot be made for sites with only survey-level data.

*5.5.1.3.6.2 Historic-era Built Environment Methods*

Preparation of the project HBER was guided by a definition of the historic-era built environment utilized for similar infrastructure projects. Maintaining the established definition ensures methodological continuity with other SCE projects. For the purposes of the HBER, the built environment includes buildings, structures, bridges, dams, canals, aqueducts, railroads, ditches and irrigation systems, electric power conveyance facilities, and paved or unpaved roads and highways. The methodological approach entailed completion of three main tasks – desk and field survey, research, and reporting.

*5.5.1.3.6.2.1 Records Search Methods*

The HBER utilized the results of the AGOL records search, as well as conducted research to included contextual information and imagery from the Online Archive of California, the Kern County Museum, U.S. Census records, United States Geological Service (USGS), and digitized copies of California newspapers available via the University of California Riverside (UCR) California Digital Newspaper Collection. Historic-era maps played a key role in understanding the history of the area and were used to determine the age of paved and unpaved roads that intersect with the APE. Map types reviewed include historical USGS topographical maps and BLM Government Land Office (GLO) plat maps for the townships associated with the proposed project area. Lastly, existing cultural resource management reports and context statements were utilized in this study where overlapping themes and survey locations exist. The HBER includes a historical narrative of the Project area, brief histories of communities in the vicinity of the Project area, and contextual themes identified within the Project area. Specific references used in the development of the historical narrative are cited in the footnotes of the report.

*5.5.1.3.6.2.2 Built Environment Survey*

In advance of the field survey effort, a desk top survey was performed to identify all built environment improvements in the vicinity of the Project locations. The desk survey included use of current aerial imagery, obtained from Google Earth Professional, and review of historic aerial imagery, ca. 1974-1975, obtained from the USGS Earth Explorer database, and Kern and Los Angeles County Assessor data. The year-built data were initially obtained for all observed improvements using these cited sources. The locations of historic-era improvements were overlaid against the proposed Project locations to identify what improvements directly intersect with the proposed Project locations.

The boundary delineated around these discontinuous survey locations is identified as the APE/API. The APE/API generally encompasses proposed project corridor, measuring approximately 280-feet in width over 65.3-miles (comprising the Direct APE/API) and extends 0.50 miles out from each side of the Direct APE/API to form the Indirect APE/API. Maps delineating the APE/API survey boundaries, with all built environment improvement locations depicted, are included as Appendix A of the project HBER.

Field survey activities were completed in August, September, and December 2019. All buildings, structures, site features, and view corridors within and surrounding the APE/API were photographed for further study in the HBER. Notes were compiled on the existing conditions, architectural features, and observed modifications for use in DPR 523 series forms. Supplemental observation of buildings and structures was completed as part of post-processing. An APE/API photo survey package is included as Appendix B of the project HBER. As part of desk and field survey activities, 363 built environment improvements were observed within the APE/API (HBER Appendix C, Table 1). Of those 363 improvements, 159 are historic-era (at least 45 years of age) and 204 are contemporary-period (less than 45 years old). Of the 159 historic-era improvements observed, 87 directly intersect with the proposed project (Direct APE/API) (HBER Appendix C, Table 2).

##### *5.5.1.3.6.2.3 National Register and California Register Evaluations*

Improvements identified within the direct APE were documented and evaluated under the criteria of the NRHP/CRHR on DPR 523 series forms. For previously recorded properties, updated DPR forms were provided to demonstrate a representative view of the previously recorded improvement in the vicinity of the APE. Complete DPR sets were prepared for the previously unrecorded properties. All DPR 523 forms are included as Appendix D of the project HBER.

#### 5.5.1.3.7 Cultural Resources Results

##### *5.5.1.3.7.1 Records Search*

Records searches revealed a total of 24 previously recorded cultural resources located within the APE/API.

##### *5.5.1.3.7.2 Previously Conducted Cultural Resource Studies within the Direct APE/API*

A majority of the APE/API has not been previously surveyed. The 300-foot survey corridor encompasses 2,395 acres, which was calculated by using ArcGIS software to buffer the existing subtransmission alignment centerline by 150 feet (45.7 m); resulting in a 300-foot (91.4-m) wide corridor. Of this, a total of 471 acres have been previously surveyed (~20% of total survey area), 56 acres of which have been surveyed in the past ten years (~12% of the previously surveyed acres). SCE provided a sample of 25 previous cultural investigations from the SSJVIC that cover most of the GKR Project corridor.

Of the representative sample of previous cultural investigations provided by SCE, more than half have been completed since 2000, and are documented within fourteen cultural resources technical reports. The remaining eleven reports were completed from the 1970s to 1990s. Most of these investigations are Phase I survey reports connected to large infrastructure development projects (e.g. highways, pipelines and transmission lines). There are two Phase I reports for solar development, three reports for archaeological investigations at Fort Tejon State Historic Park, one Phase II subsurface testing investigation and one data excavation report and five miscellaneous projects.

##### *5.5.1.3.7.3 Previously Recorded Resources within the Direct APE/API*

A total of 24 previously recorded resources were mapped within the APE/API. MCC performed a geospatial Quality Assurance/Quality Control (QA/QC) of the existing data and determined that five of the DPR forms were not correctly digitized and required minor edits. Four additional DPR forms are very unclear, and therefore the resources may be incorrectly mapped. Twenty-one resources are correctly mapped.

*5.5.1.3.7.4 Cultural Resources*

Of the 24 previously recorded resources mapped within the APE/API, 11 were identified as cultural resources. The prehistoric resources (n=8) include bedrock milling features, lithic scatters, and isolated lithic materials. A total of two bedrock milling features, two lithic scatters, and four prehistoric isolates are located within the direct APE/API. The historic resources (n=13) include one historic homestead, one historic barn with farming equipment, one historic concrete pad, one historic landmark marker, and one historic isolate. Three archaeological resource within the APE/API is identified as multi-component (both historic and prehistoric).

*5.5.1.3.7.5 Historic Period Resources*

Urbana personnel identified a total of 363 built environment improvements within the Direct and Indirect APEs (Appendix C, Table 1). Of those 363 improvements:

- 87 are historic-era (at least 45 years of age) and within the Direct APE/API,
- 70 are contemporary-period (less than 45 years of age) and within the Direct APE/API,
- 72 are historic-era (at least 45 years of age) and within the Indirect APE/API, and
- 134 are contemporary-period (less than 45 years of age) and within the Indirect APE/API.

The improvements observed within the survey area date from ca. 1874 (Southern Pacific Railroad alignment) forward. The corridor contains very significant properties associated with water and power conveyance, ranching, agriculture, and transportation. The project corridor begins in the Kern River Canyon at the northern end of the HBER study area. This is the location of the Kern River No. 1 Powerhouse constructed between 1902 and 1907. The Kern River No. 1 transmission line originated at the powerhouse and transmitted electricity through the Tehachapi Mountains and the Santa Clarita Valley, and into Los Angeles. In later years, the same power conveyance corridor was used for additional lines as growing demand in Los Angeles required more power resources. A second major power generating operation at Big Creek in the upper San Joaquin River sent power along this same general path to Los Angeles. Big Creek is a tributary to the San Joaquin River and the heart of the Big Creek Hydroelectric System which is now a National Register listed historic district. Construction at Big Creek started in 1909.

Through the central portion of the project area the corridor crosses valuable and productive agricultural lands in the southern San Joaquin Valley. Significant development in this area began when the Mexican government awarded five land grants starting in the 1840s. Four of these land grants would later become the heart of the vast Tejon Ranch. Once swamp lands long the Kern River were drained, the area moved from ranching to agriculture as the primary economic activity. This process led to one of the most significant water rights cases in California and western history, the Lux v. Haggin case of 1886. In this landmark case, the California Supreme Court decided that the riparian water rights of Miller and Lux superseded prior appropriation claims of Haggin and Tevis. This created a unique split system of riparian and prior appropriation water rights in California. This decision paved the way for substantial agricultural development in Kern County.

In the 20th century, Kern County was the scene of conflict between owners of agricultural properties and workers. This culminated in a divisive strike that was started by Filipino farm workers in 1965 and ultimately taken up by labor activists César Chávez and Dolores Huerta. The strike was eventually settled in 1970 and followed by the adoption of the California Agricultural Labor Relations Act in 1975. Several significant properties are associated with agricultural labor in the project vicinity, although these are located well outside the direct and indirect APE. In 2008, the "Forty Acres" headquarters of the United

Farmworkers in Delano was declared a National Historic Landmark. A second headquarters location, Nuestra Señora Reina de la Paz near Keene, is also a National Historic Landmark. La Paz is also recognized as the Cesar E. Chavez National Monument.

Crops need water, and two important water conveyance systems pass through the project area. The earliest major water conveyance is the Central Valley Project (CVP), which is a federal project first planned in the 1930s. This project is primarily agricultural in nature, although about fifteen percent of CVP deliveries go to urban and industrial users. A major CVP conveyance infrastructure ends at Bakersfield, where the Friant-Kern Canal terminates at the Kern River. At the Kern River, the Arvin-Edison Canal begins. This serves the Arvin-Edison Water Storage District within the project area. A later project is the California Aqueduct, which is part of the State Water Project (SWP). The SWP primarily serves urban and industrial customers in southern California, although agricultural users - primarily in Kern County - account for about thirty percent of all deliveries. Authorized in 1960, more than two-thirds of Californians receive some portion of their water supply from the SWP. The eastern leg of the project corridor passes through the Tehachapi-Cummings County Water District (TCCWD), which is a SWP recipient.

The movement of water and power through the project corridor emphasizes the importance of transportation as a significant theme. Towards the southern end of the project the transmission corridor passes through the Tejon Pass, a major link between northern and southern California known to Native Americans and first used by explorers during the Spanish Era. This pass, which leads to the great Central Valley of California, was later the location of Fort Tejon. As noted above, this was a U.S. military outpost from 1854 to 1864 that guarded the important north-south supply route in central California. In 1940, the Tejon Ranch donated the site of Fort Tejon to the State of California as a preservation measure; it became a State Historical Park in 1962.

Today, I-5 crosses Tejon Pass and is a major transportation corridor. During the historic era, this was the location of the Ridge Route. Completed in 1915, this was the first paved road to connect Los Angeles to the state capitol at Sacramento through Bakersfield. The Ridge Route through Tejon Pass was improved with reinforced concrete in 1919. In 1926, the route from Stockton to Los Angeles including the Ridge Route was designated U.S. Highway 99. Construction of Interstate 5 followed a different path through the Central Valley from US 99; however, both routes converged through the Tejon Pass. This portion of the Interstate was complete by 1972.

##### *5.5.1.3.7.6 Multicomponent Resources*

Two resources within the APE/API are identified as multi-component (both historic and prehistoric). A notable multicomponent resource in the direct APE/API is the historic Fort Tejon with an underlying Native American habitation/village site.

##### *5.5.1.3.7.7 NRHP/CRHR Eligibility Status*

Within the direct APE, one cultural resource is listed on the NRHP: Fort Tejon (NRHP no. 71000140). None of the remaining cultural resources have been evaluated for NRHP/CRHR status.

A total of 4 improvements sited within the Direct APE/API are listed on or formally determined eligible for listing on the NRHP/CRHR and meet the definition of an historical resource pursuant to CEQA (CRHR Status Code categories 1-2).

A total of 5 improvements within the Direct APE/API appear to be eligible for listing on the NRHP/CRHR and appear to meet the definition of an historical resource pursuant to CEQA (CRHR Status Code categories 3 / 3C).

A total of 6 improvements within the Direct APE/API appear to be individually ineligible for listing on the NRHP/CRHR; however, these improvements appear to warrant special consideration in the planning process (CRHR Status Code 6L / 6Z).

*5.5.1.3.7.8 Previously Conducted Cultural Resource Studies within the Indirect APE/API*

A total of 79 previously conducted studies have occurred within the 1-mile buffer of the study area. Of these studies, 38 were conducted from the 1970s to 1990s. The remaining studies (n=41) have been completed since the 2000s. The most recent previously conducted study occurred in 2017.

*5.5.1.3.7.8.1 Previously Recorded Resources within the Indirect APE/API*

A total of 200 previously recorded cultural resources are located within the 1-mile buffer of the APE/API.

*5.5.1.3.7.9 Time Periods*

Of the 200 previously recorded cultural resources, 140 resources are categorized as prehistoric with 103 resources' main feature recorded as a bedrock milling feature.

Forty-two resources are categorized as historic and mostly compromise of historic-era infrastructure and built environment (water conveyance systems, roads, farms, mining quarries, and structures) and refuse scatters. Eighteen resources are categorized as multi-component resources.

*5.5.1.3.7.10 NRHP/CRHR Eligibility Status*

Within the indirect APE, no cultural resources are listed on the NRHP, however, three cultural resources are eligible, or appear to be eligible, to be listed. The prehistoric site, Horsethief Flat (P-15-3367) appears eligible for listing through survey evaluation; additionally, prehistoric sites P-15-11562 and P-15-5095 have been evaluated as eligible. Prehistoric site P-15-5095 is also listed on the CRHR, as is Historic site P-15-7740. The Historic Rose Station is listed as a CRHR Landmark. Nine cultural resources have been evaluated and determined not eligible for the NRHP, these are primarily historic sites and isolates. None of the remaining cultural resources have been evaluated for NRHP/CRHR status.

### *5.5.1.4 Cultural Resource Survey Boundaries*

Figureset 5.5-1 illustrates the boundaries of the cultural resources surveys performed along the GKR Project alignment; this figure also includes the mileposts assigned along the GKR Project alignment.

Confidential GIS data for the resource locations and boundaries will be provided separately under confidential cover.

## 5.5.2 Regulatory Setting

### *5.5.2.1 Regulatory Setting*

Federal, state, and local regulations were reviewed for applicability to the GKR Project.

#### 5.5.2.1.1 Federal

A federal undertaking is a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency; those carried out with federal financial assistance; those requiring a federal permit, license, or approval; and those subject to state or local regulation administered pursuant to a delegation or approval by a federal agency (36 CFR 800.16[y]). Actions and undertakings may take place either on or off federally controlled property and include new and continuing projects, activities, or programs and any of their elements not previously considered under the NEPA and Section 106 of the NHPA (see sections 5.5.2.1.1.1 - 5.5.2.1.1.3, below). If the project requires federal water permitting or is located on federal lands, it is subject to compliance with NEPA and Section 106 of the NHPA. In addition to the federal regulations described in the following subsections, federal authorizations would also be required because portions of the GKR Project area are under the jurisdiction of the Department of Agriculture's USFS.

###### *5.5.2.1.1.1 National Environmental Policy Act*

NEPA requires the federal government to carry out its plans and programs in such a way as to "preserve important historic, cultural, and natural aspects of our national heritage" (42 United States Code [USC] § 4331[b][4]). The intent of the statute is to require that agencies obtain sufficient information regarding historic and cultural properties (including consulting, for example, appropriate members of the public; local, state and other federal government agencies; and Native American tribes, organizations, and individuals) to make a determination of the historical and cultural significance of affected historic or cultural properties and to take into account whether irreversible adverse impacts to such resources can or should be avoided, minimized, or mitigated.

###### *5.5.2.1.1.2 National Historic Preservation Act*

Enacted in 1966 and amended most recently in 2014, the National Historic Preservation Act (NHPA; 54 USC §§ 300101 et seq.) instituted a multifaceted program, administered by the Secretary of the Interior, to encourage sound preservation policies of the nation's cultural resources at the federal, state, and local levels. The NHPA authorized the expansion and maintenance of the NRHP, established the position of State Historic Preservation Officer (SHPO), and provided for the designation of State Review Boards. The NHPA also set up a mechanism to certify local governments to carry out the goals of the NHPA, assisted Native American tribes in preserving their cultural heritage, and created the Advisory Council on Historic Preservation (ACHP).

###### *5.5.2.1.1.3 Section 106*

Section 106 of the NHPA requires federal agencies to consult with the ACHP to take into account the effects of their undertakings on historic properties. The Section 106 process involves identification of significant historic resources within an APE; determination if the undertaking will cause an adverse effect on historic resources; and resolution of those adverse effects through execution of a Memorandum of Agreement." Title 36 of the CFR part 800 defines how federal agencies meet these responsibilities. 36 CFR 800.5(a) describes the process for evaluating a project's adverse effects on cultural resources. An adverse effect is found when a federal undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Examples of adverse effects are provided in 36 CFR 800(a)(2) and include, but are not limited to:

- Physical destruction of or damage to all or part of the property;
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines;
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;

- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
- Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

*5.5.2.1.1.4 National Register of Historic Places*

The NRHP was established by the NHPA of 1966 as "an authoritative guide to be used by federal, state, and local governments, private groups and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR part 60.2). The NRHP recognizes properties that are significant at the national, state, and local levels. To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must also possess integrity of location, design, setting, materials, workmanship, feeling, and association.

A property is eligible for the NRHP if it is significant under one or more of the following criteria:

- Criterion A: It is associated with events that have made a significant contribution to the broad patterns of our history.
- Criterion B: It is associated with the lives of persons who are significant in our past.
- Criterion C: It embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction.
- Criterion D: It has yielded, or may be likely to yield, information important in prehistory or history. Ordinarily cemeteries, birthplaces, or graves of historic figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historic buildings; and properties that are primarily commemorative in nature are not considered eligible for the NRHP unless they satisfy certain conditions. In general, a resource must be 50 years of age to be considered for the NRHP unless it satisfies a standard of exceptional importance.

In addition to meeting the significance criteria, a property must retain historic integrity, which is defined in the National Register Bulletin 15 as the "ability of a property to convey its significance" (National Park Service 1990). To assess integrity, the National Park Service recognizes seven aspects or qualities that, considered together, define historic integrity. To retain integrity, a property must possess several, if not all, of these seven qualities, which are defined in the following manner in National Register Bulletin 15:

- Location: the place where the historic property was constructed or the place where the historic event occurred
- Design: the combination of elements that create the form, plan, space, structure, and style of a property
- Setting: the physical environment of a historic property

- Materials: the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property
- Workmanship: the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory
- Feeling: a property's expression of the aesthetic or historic sense of a particular period of time; and/or
- Association: The direct link between an important historic event or person and a historic property

A cultural resource that meets the definition provided, meets at least one of the criteria listed above, and meets at least several qualities of historic integrity is considered eligible for listing in the NRHP and is referred to as a "historic property."

##### *5.5.2.1.1.5 Archaeological Resources Protection Act*

The Archaeological Resources Protection Act (ARPA; 16 U.S.C. § 470aa, et seq.) of 1979 provides for the protection of archaeological resources more than 100 years old and that occur on federally owned or controlled lands. The statute makes it unlawful to excavate and remove items of archaeological interest from federal lands without a permit, and it defines the process for obtaining such a permit from the responsible federal agency. This process includes a 30-day notification to interested persons, including Native American tribes, by the agency to receive comments regarding the intended issuing of a permit. The law establishes a process for prosecuting persons who illegally remove archaeological materials from lands subject to ARPA. The law also provides for curation of archaeological artifacts, ecofacts, notes, records, photographs, and other items associated with collections made on federal lands. Standards for curation are provided for in regulations at 36 CFR 79.

##### *5.5.2.1.1.6 Native American Graves Protection and Repatriation Act*

The Native American Graves Protection and Repatriation Act (NAGPRA; 25 U.S.C. 32 § 3001 et seq.) provides a process for museums and federal agencies to return certain Native American cultural items (i.e., human remains, funerary objects, sacred objects, and objects of cultural patrimony) to lineal descendants, culturally affiliated Native American tribes (i.e., tribes recognized by the Secretary of the Interior), and Native Hawaiian organizations, if the legitimate cultural affiliation of the cultural items can be determined according to the law. Museums, as defined under the statute, are required to inventory cultural items in their possession and determine which items can be repatriated to the appropriate party. Cultural items intentionally or unintentionally excavated and removed from federal lands may be subject to NAGPRA. Under the NAGPRA regulations (43 CFR 10.3 and 10.5), a federal agency must prepare, approve, and sign a Plan of Action (POA) if the agency intends to excavate or remove, or leave in place NAGPRA cultural items when these cultural items are exposed or are found already exposed, and does not wish for activity in the area of the exposed cultural items to halt.

#### 5.5.2.1.2 State

##### *5.5.2.1.2.1 California Public Utilities Commission General Order 131-D*

Pursuant to CPUC GO 131-D, the CPUC has sole and exclusive jurisdiction over the siting and design of electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities in the state of California. Under CEQA, the CPUC is the lead agency for such GKR Project elements. SCE is required to comply with GO 131-D and is seeking a PTC from the CPUC for the GKR Project; therefore, compliance with CEQA and other state environmental statutes involving cultural resources is required. The CPUC is tasked with compliance of all provisions in CEQA and the CEQA Guidelines that concern cultural resources as explained below.

##### *5.5.2.1.2.2 California Environmental Quality Act*

The CEQA Statute (Pub. Resources Code § 21000 et seq.) and the CEQA Guidelines (14 CCR §§ 15000 et seq.) direct lead agencies to determine whether cultural resources are "historically significant" resources. CEQA requires that potential project impacts to cultural resources be assessed, and requires mitigation if significant (or "unique") cultural resources would be affected (Section 21083.2 [a-1] and CEQA Guidelines Appendix G). Generally, a cultural resource is considered "historically significant" if the resource is 45 years old or older; possesses integrity of location, design, setting, materials, workmanship, feeling, and association; and meets the requirements for listing on the CRHR under any one of the following criteria:

1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2) Is associated with the lives of persons important in our past;
3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,
4) Has yielded, or may be likely to yield, information important in prehistory or history (Title 14 California Code of Regulations [CCR] Section 15064.5).

The statutes and guidelines specify how cultural resources are to be managed in the context of projects, such as the GKR Project. Briefly, archival and field surveys must be conducted, and identified cultural resources must be inventoried and evaluated in prescribed ways. Prehistoric and historical archaeological resources as well as historic built environment resources deemed "historically significant" must be considered in project planning and development. Resources eligible for listing on the CRHR are referred to as "historical resources."

If a Lead Agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 and CEQA Guidelines (14 CCR) Section 15064.5 would apply. If an archaeological site does not meet the CEQA Guidelines criteria for a historical resource, the site is to be treated in accordance with the provisions of PRC Section 21083 regarding unique archaeological resources. The CEQA Guidelines note that if a resource is neither a unique archaeological resource nor a historical resource, the effects of a project on that resource shall not be considered a significant effect on the environment (CEQA Guidelines Section 15064[c][4]).

##### *5.5.2.1.2.3 CEQA Guidelines Section 15064.5(e), Assembly Bill 2641, Public Resources Code Sections 15064.5(e) and 15064.5(d), and Health and Safety Code Section 7050.5*

If human remains of any kind are found during construction activities on non-federal or reservation land, these laws require that ground-disturbing project activities be stopped in the immediate vicinity of the discovery and that the county coroner be called in to assess the remains. The coroner will examine the remains and determine the next appropriate action based on his or her findings. If the county coroner determines that the remains to be of Native American origin, the coroner must contact the NAHC within 24 hours. The NAHC will then identify a most likely descendant (MLD) to be consulted regarding treatment and/or reburial of the remains.

##### *5.5.2.1.2.4 Area of Potential Impact*

Under CEQA, the impact area is defined as the geographic area or area within which a project may directly or indirectly cause alterations in the character or use of significant historical or archaeological resources. In the current document, area of potential impact (API) is used for this term.

##### *5.5.2.1.2.5 California State Assembly Bill 52*

California State Assembly Bill 52 (AB 52) of 2014 amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3.

AB 52 formalizes the lead agency/tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or EIR.

Section 4 of AB 52 adds Sections 21074(a) and 21074(b) to the PRC, which address tribal cultural resources and cultural landscapes. Section 21074(a) defines tribal cultural resources as one of the following:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following: a. Included or determined to be eligible for inclusion in the CRHR b. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Section 1 (a)(9) of AB 52 establishes that "a substantial adverse change to a tribal cultural resource has a significant effect on the environment." Effects on tribal cultural resources should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to tribal cultural resources, the consultation shall include those topics (PRC Section 21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3[a]).

##### *5.5.2.1.2.6 California Register of Historical Resources*

Cultural resources include archaeological and historic objects, sites and districts, historic buildings and structures, and sites and resources of concern to local Native Americans and other ethnic groups. Cultural resources that meet the criteria of eligibility for the CRHR are termed "historic resources." Archaeological resources that do not meet CRHR criteria also may be evaluated as "unique," and impacts to such resources could be considered significant.

A site meets the criteria for inclusion on the CRHR if:

- It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
- It is associated with the life or lives of a person or people important to California's past

- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values
- It has yielded, or may be likely to yield, information that is important to prehistory or history

A resource eligible for the CRHR must meet one of the criteria of significance described previously and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the NRHP, but it may still be eligible for listing in the CRHR.

The CRHR automatically includes the following:

- California properties listed on the NRHP and those formally determined eligible for the NRHP
- California Registered Historical Landmarks from No. 770 onward
- Those California Points of Historical Interest that have been evaluated by the OHP and that have been recommended to the State Historical Resources Commission for inclusion on the CRHR

Other resources that may be nominated to the CRHR include the following:

- Historical resources with a significance rating of Category 3 through 5
- Individual historical resources
- Historical resources contributing to historic districts
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as a historic preservation overlay zone

Impacts to "unique archaeological resources" also are considered under CEQA, as described under PRC Section 21083.2. A unique archaeological resource is an archaeological artifact, object, or site that clearly demonstrates that—without merely adding to the current body of knowledge—there is a high probability that it meets one of the following criteria:

- It contains information needed to answer important scientific questions, and there is a demonstrable public interest in that information
- It has a special and particular quality, such as being the oldest of its type or the best available example of its type
- It is directly associated with a scientifically recognized, important prehistoric or historic event or person
- A non-unique resource is one that does not fit the above criteria

*5.5.2.1.2.7 Treatment of Human Remains*

The disposition of burials falls first under the general prohibition on disturbing or removing human remains under California Health and Safety Code (CHSC) Section 7050.5. More specifically, remains suspected to be Native American are treated under CEQA at 14 CCR Section 15064.5; PRC Section 5097.98 illustrates the process to be followed in the event that remains are discovered. If human remains are discovered during construction, no further disturbance to the site shall occur, and the County Coroner must be notified (14 CCR 15064.5 and PRC 5097.98).

#### 5.5.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the GKR Project. Pursuant to GO 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the counties' and cities' regulations are not applicable as the counties and cities do not have jurisdiction over the GKR Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

*5.5.2.1.3.1 Kern County Historic Preservation Program*

Policies and implementation measures for cultural resources are contained within the Land Use Element of the Kern County General Plan, within Section 1.10.3 "Archaeological, Paleontological, Cultural, and Historical Preservation." Kern County Policy: The County will promote the preservation of cultural and historic resources that provide ties with the past and constitute a heritage value to residents and visitors.

*5.5.2.1.3.2 Los Angeles County General Plan*

The Los Angeles County General Plan Conservation and Natural Resources Element lists the following goals and policies:

- Goal C/NR 14. Protect historical, cultural, and paleontological resources.
- Policy C/NR 14.1. Mitigate all impacts from new development on or adjacent to historical, cultural, and paleontological resources to the greatest extent feasible.
- Policy C/NR 14.4. Ensure proper notification procedures to Native American tribes in accordance with Senate Bill 18 (2004).
- Policy C/NR 14.6. Ensure proper notification and recovery processes are carried out for development on or near historical, cultural, and paleontological resources

## 5.5.3 Impact Questions

### *5.5.3.1 Impact Questions*

The significance criteria for assessing the impacts to cultural resources come from the CEQA Environmental Checklist and states that a project causes a potentially significant impact if it would:

- Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5;
- Cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5; or
- Disturb any human remains, including those interred outside of formal cemeteries.

### *5.5.3.2 Additional CEQA Impact Questions*

There are no CPUC-identified additional CEQA impact questions.

### 5.5.4 Cultural Resources Impact Analysis

CEQA guidelines specify that a "substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines Section 15064.5). Material impairment occurs when a project alters in an adverse manner or demolishes "those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion" or eligibility for inclusion in the NRHP, CRHR, or local register. In addition, pursuant to CEQA Guidelines section 15126.2, the "direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects."

The following guides and requirements are of particular relevance to this study's analysis of indirect impacts to historic resources. Pursuant to CEQA Guidelines (Section 15378), study of a project under CEQA requires consideration of "the whole of an action, which has the potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment." CEQA Guidelines (section 15064[d]) further defines direct and indirect impacts as follows:

1. A direct physical change in the environment is a physical change in the environment which is caused by and immediately related to the project.
2. An indirect physical change in the environment is a physical change in the environment which is not immediately related to the project, but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect physical change in the environment.
3. An indirect physical change is to be considered only if that change is a reasonably foreseeable impact which may be caused by the project.

In terms of archaeological resources, PRC Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If it can be demonstrated that a proposed project would cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Sections 21083.2[a], [b], and [c]). CEQA notes that if an archaeological resource is neither a unique archaeological resource nor a historical resource, the effects of the project on those resources shall not be considered to be a significant effect on the environment (CEQA Guidelines section 15064.5[c][4]).

### 5.5.4.1 *Impact Analysis*

#### 5.5.4.1.1 Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?

*5.5.4.1.1.1 Construction*

**Less than Significant Impact.** The proposed GKR Project would not materially impact NRHP/CRHR listed or eligible improvements within the Direct APE/API. None of the NRHP/CRHR listed or eligible improvements are proposed for demolition or removal, although a number of vehicular roads within the Direct APE/API will be utilized as part of construction, operation, and maintenance of the GKR Project. Use of the roads would not cause a significant impact: no specific work or modifications are proposed for these public roads, thus no impacts to any potentially eligible roads is anticipated.

Additionally, the proposed project involves replacement of towers in the vicinity of NRHP/CRHR listed Fort Tejon State Historic Park. Replacing towers in the vicinity of the state park would not result in a significant visual degradation in the park's setting. The project would not cause a significant visual impact on the state park as a historical resource.

The project would not cause a substantial adverse change in the significance of a historical resources pursuant to CEQA Guidelines Section 15064.5, and thus impacts would be less than significant.

*5.5.4.1.1.2 Operations*

**Less than Significant Impact.** Normal O&M of subtransmission lines would be controlled remotely through SCE control systems, and manually in the field as required. Maintenance would occur as needed and could include activities such as repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles, tree trimming, brush and weed control, and access road maintenance. Most regular O&M activities of overhead facilities are performed from existing access roads with no surface disturbance. Repairs to facilities, such as repairing or replacing poles and structures, could occur in undisturbed but previously surveyed areas. Therefore, operation impacts to historical resources as defined in CEQA Guidelines Section 15064.5 would be less than significant.

#### 5.5.4.1.2 Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

*5.5.4.1.2.1 Construction*

**Less than Significant Impact with Mitigation.** As previously described, the majority of the construction activities associated with the GKR Project would occur along the existing subtransmission alignment and within existing substations. However, construction activities requiring ground disturbance could potentially affect surficial or buried cultural deposits or archaeological sites. All potentially NRHP-eligible or archaeologically and historically sensitive sites identified during records searches and field surveys would be evaluated to determine eligibility for listing under the NRHP, CRHR, and/or the NSRHP. All potentially NRHP-eligible or archaeologically and historically sensitive sites identified within the APE would be considered environmentally sensitive areas (ESAs). Prior to construction, SCE would implement APM CUL-1, which includes the preparation of a Cultural Resources Management Plan (CRMP). The primary objectives of the CRMP would be the management, avoidance, and/or minimization of potential adverse effects on cultural resources. SCE would also implement APM CUL-2, which would require the demarcation of all ESAs with proper signage prior to construction. Signage would include protective fencing, flagging, or other markers to protect ESAs from inadvertent trespass during construction within 50 feet of ground-disturbing activities. The CRMP would specify monitoring requirements for the identification of cultural resources during construction, and would outline procedures to implement during the inadvertent discovery of cultural resources. The CRMP would also specify roles and responsibilities of jurisdictional agencies for the long-term management of identified cultural resources in the APE.

SCE would also implement APM CUL-3, requiring the training of workers. The training would provide construction personnel with instruction on compliance with APMs and mitigation measures. Additional objectives of the WEAP include instruction on the roles of cultural resource monitors and the appropriate treatment of ESAs. Further, where appropriate, SCE would deploy monitors per APM CUL-4.

Based on the consideration of archaeological resources in the GKR Project area during the final design of the GKR Project and with the implementation of cultural resource-related APMs, no substantial adverse changes related to an archaeological resource are anticipated. Therefore, impacts would be less than significant.

*5.5.4.1.2.2 Operations*

**Less than Significant Impact.** Normal operation of substation, transmission, subtransmission, distribution, and telecommunications lines would be controlled remotely through SCE control systems, and manually in the field as required. Maintenance would occur as needed and could include activities such as repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles, tree trimming, brush and weed control, and access road maintenance. Most regular O&M activities of overhead facilities are performed from existing access roads with no surface disturbance. Repairs to facilities, such as repairing or replacing poles and structures, could occur in undisturbed, but previously surveyed areas. Therefore, operation impacts to archaeological resources as defined in Section 15064.5 would be less than significant.

#### 5.5.4.1.3 Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

*5.5.4.1.3.1 Construction*

**Less than Significant Impact with Mitigation.** The cultural resources inventory did not identify human remains along the GKR Project.

It is possible that human remains could be uncovered during construction. It is not always possible to predict where Native American human remains might occur outside of formal cemeteries. Ground-disturbing activities could disturb human remains, including those interred outside of formal cemeteries. However, implementation of a WEAP would help workers identify potential human remains and establish procedures for stopping work and notifying SCE's cultural resource staff and construction supervisors in the event that human remains are detected.

As would be described in the CRMP, if human remains are inadvertently discovered during construction activities, all work in the vicinity of the find would cease within a 100-foot (30.5-m) radius of the remains, and the area would be secured and protected to ensure that no additional disturbance occurs. The county coroner would then be contacted in accordance with CEQA Guidelines Section 15064.5(e), AB 2641, PRC Sections 15064.5(e) and 15064.5(d), and California Health and Safety Code (HSC) Section 7050.5. The coroner would have two working days to examine the remains after being notified. If the coroner determines that the remains are Native American (i.e., not subject to the coroner's authority) and located on private or state land, the coroner has 24 hours to notify the NAHC of the determination. The NAHC is required under PRC Section 5097.98 to identify an MLD, notify that person, and request that they inspect the remains and make recommendations for treatment and/or disposition. The MLD would have 48 hours to inspect the find and make recommendations for treatment of the human remains. Work would be suspended in the area of the find until the MLD and landowner confer on the mitigation and treatment of the human remains. However, the human remains and associated burial items would be reburied, with appropriate dignity, on the property in a location not subject to further subsurface disturbance if one of the following occurs:

- The NAHC is unable to identify an MLD.
- The MLD identified fails to make a recommendation.
- The recommendation of the MLD is rejected and the mediation provided in PRC Section 5097.94(k) fails to provide measures acceptable to the landowner.

This procedure would ensure that the remains are treated in accordance with Section 15064.5(d) and (e) of the CEQA Guidelines, California HSC Section 7050.5, and PRC Sections 5097.98 and 5097.99.

As described in Section 5.5.4, Cultural Resources Regulatory Setting, cultural resources intentionally or unintentionally excavated and removed from federal lands may be subject to NAGPRA if the resources are confirmed to be of Native American origin. In the event that Native American items are inadvertently discovered on federal lands, NAGPRA requires that the responsible federal agency must be immediately notified by telephone and in writing. Following the receipt of the written notification, the federal agency must certify the receipt of it within three days. The activity that resulted in the discovery must be stopped immediately after discovery and may not resume until 30 days after the applicable federal agency certifies the receipt of the notification. The federal agency would also be responsible for taking immediate steps, if necessary, to further secure and protect the remains and/or items that were discovered. During this process, the federal agency would notify any MLDs or applicable Native American tribes of the discovery, obtain written confirmation of the notification, and initiate consultation, if necessary. Following consultation, the federal agency would prepare, approve, and sign a written NAGPRA Plan of Action (43 CFR 10.3 and 10.5), which would specify the treatment, care, and handling of the discovered remains and cultural resources.

SCE would comply with the applicable regulations to ensure the protection of human remains and burial sites during construction. Based on implementation of APM WEAP and APMs CUL-1, CUL-2, CUL-3, CUL-4, and CUL-5, impacts to human remains during construction would be reduced to less-than-significant levels.

###### *5.5.4.1.3.2 Operations*

**Less than Significant Impact.** O&M activities for subtransmission lines would include repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles and towers, tree trimming, brush and weed control, and access road maintenance. O&M activities would also include routine inspections and emergency repair, which would require the use of vehicles and equipment, and are typically short term in nature. Ground disturbance during O&M activities could occur in previously disturbed or potentially undisturbed but previously surveyed areas. However, O&M activities would have a low potential to encounter human remains, if any are present. If human remains are discovered during O&M activities of the GKR Project, work would stop, BMPs similar to those previously outlined would be implemented, and the remains would be treated in accordance with applicable laws. Therefore, any potential impacts would be less than significant.

### *5.5.4.2 Human Remains*

The potential for encountering human remains or grave goods during the construction of the GKR Project is low. The procedures that would be used if human remains are encountered are described in Section 5.5.4.1.3.1 above and in APMs CUL-1 and CUL-4.

### *5.5.4.3 Resource Avoidance*

The avoidance procedures that would be implemented to avoid known resources are described in APMs CUL-1, CUL-2, and CUL-3.

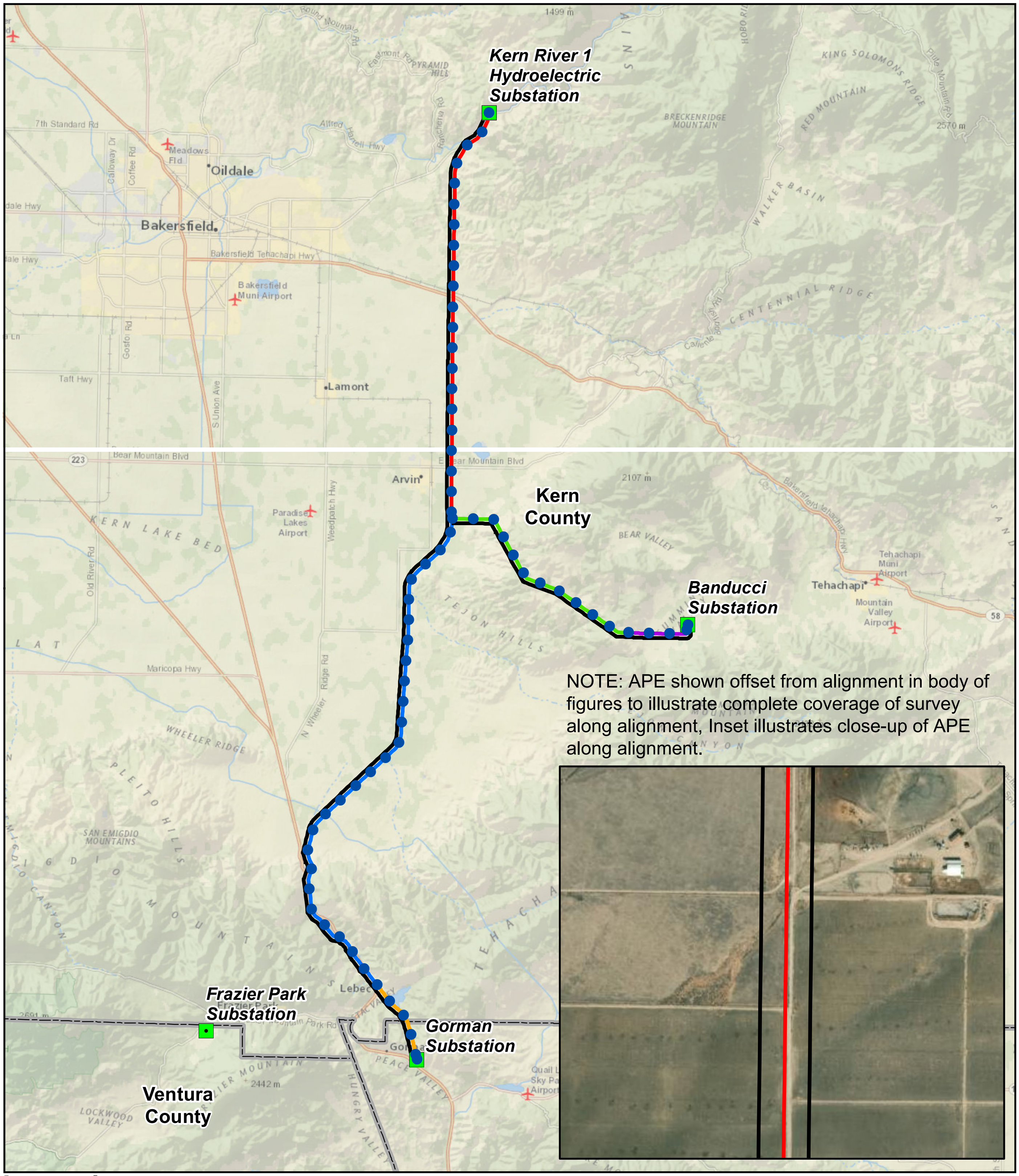
## 5.5.5 CPUC Draft Environmental Measures

SCE will implement the following CPUC-identified Draft Environmental Measure during construction of the GKR Project:

**Human Remains (Construction and Maintenance)**

Avoidance and protection of inadvertent discoveries that contain human remains shall be the preferred protection strategy with complete avoidance of such resources ensured by redesigning the project. If human remains are discovered during construction or maintenance activities, all work shall be diverted from the area of the discovery, and the CPUC shall be informed immediately. The Applicant shall contact the County Coroner to determine whether or not the remains are Native American. If the remains are determined to be Native American, the Coroner will contact the Native American Heritage Commission (NAHC). The NAHC will then identify the person or persons it believes to be the most likely descendant of the deceased Native American, who in turn would make recommendations for the appropriate means of treating the human remains and any associated funerary objects.

If the remains are on federal land, the remains shall be treated in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA). If the remains are not on federal land, the remains shall be treated in accordance with Health and Safety Code Section 7050.5, CEQA Section 15064.5(e), and Public Resources Code Section 5097.98.




## Legend

- Substation
- Mile Posts
- Segment 1
- APE
- Segment 2
- Counties
- Segment 3
- Segment 4
- Segment 5

APE = Area of Potential Effect

0 6 12
Miles

N

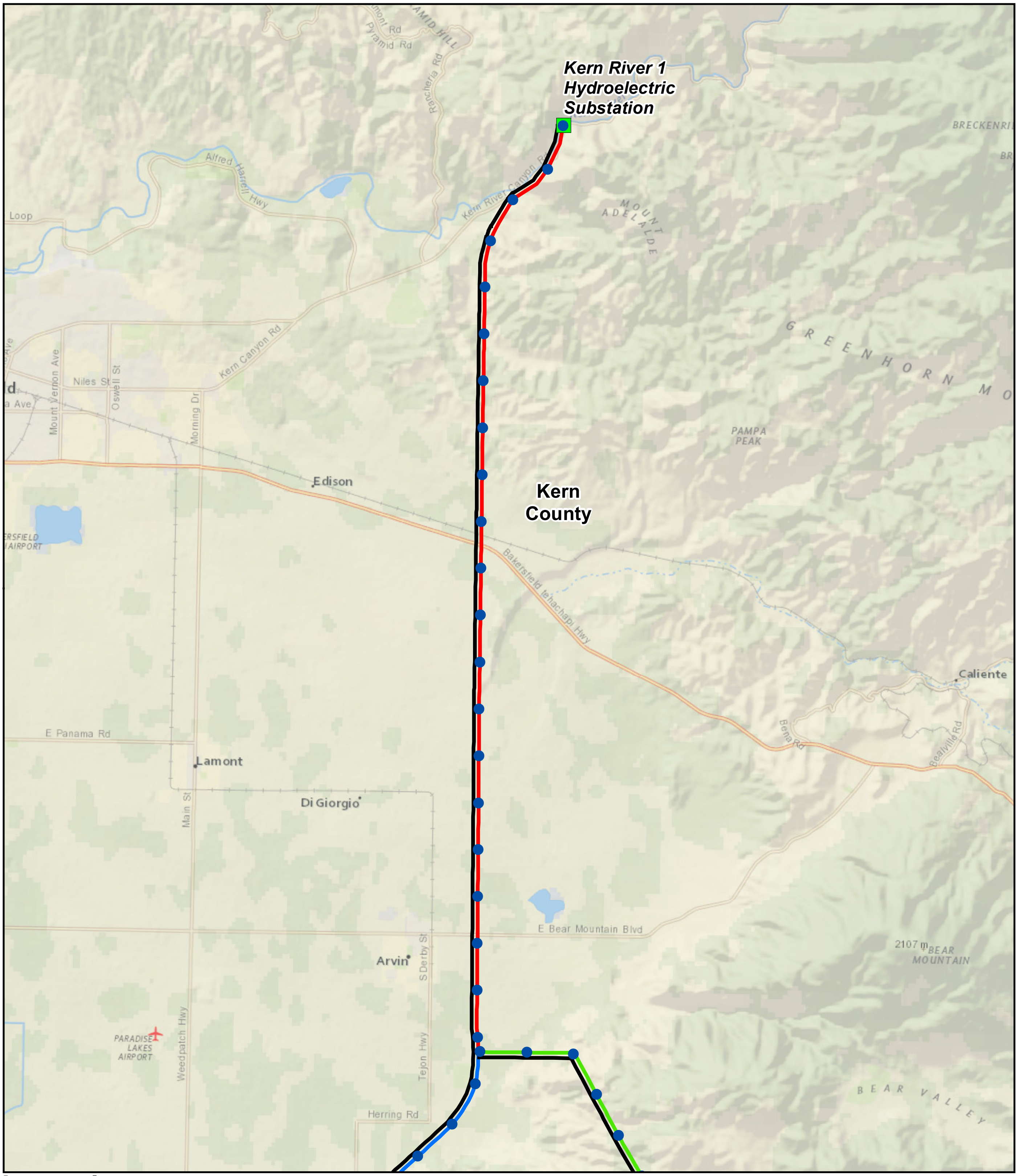
# GORMAN-KERN RIVER 66 kV PROJECT

## CULTURAL RESOURCES APE

ARCADIS SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company

FIGURESET 5.5-1.a

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-5-1_Cultural_Resources_APE.mxd 7/2/2021




## Legend

- Substation
- Mile Posts
- Segment 1
- APE
- Segment 2
- Counties
- Segment 4

APE = Area of Potential Effect

0 3 6
Miles

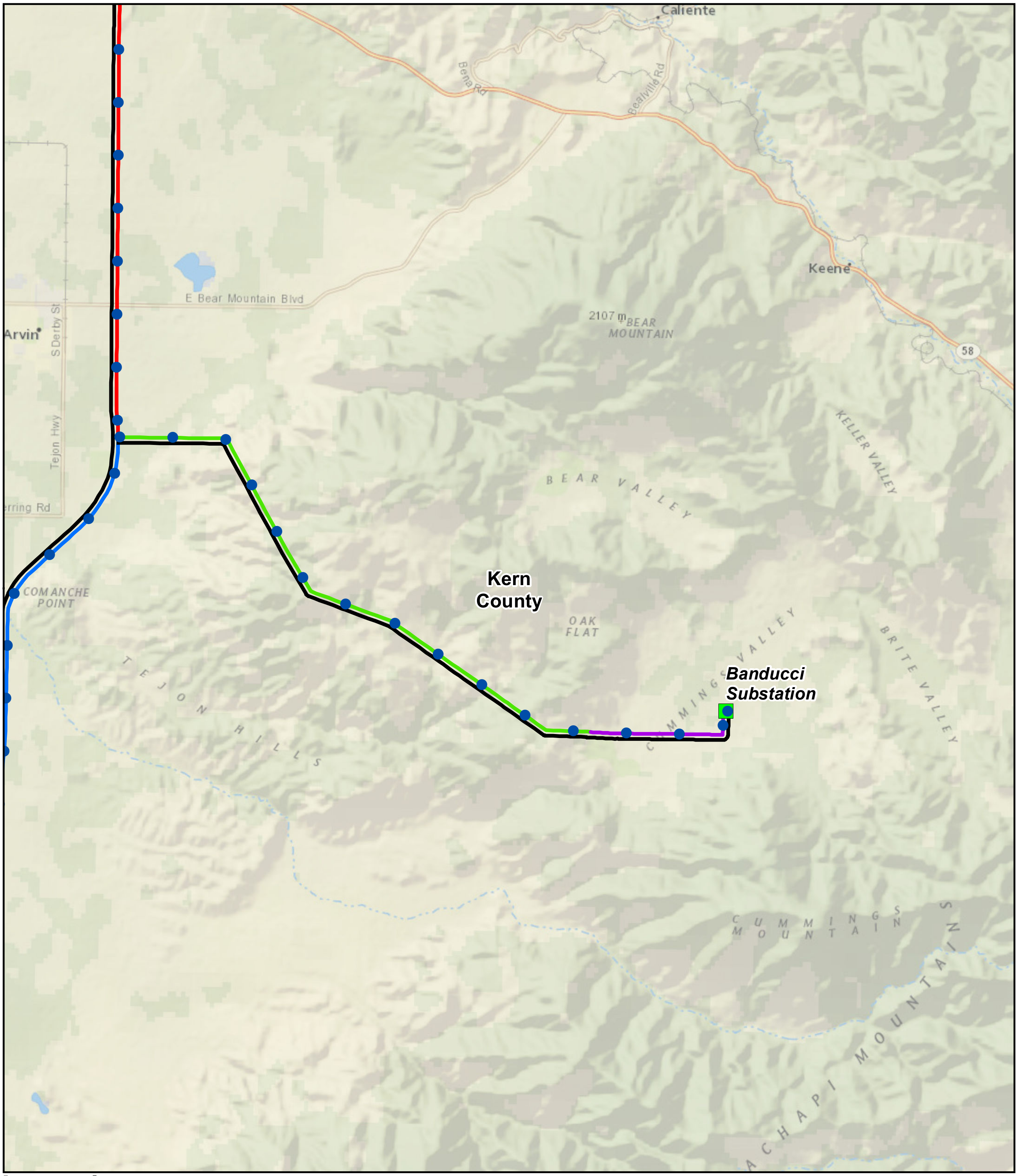
**GORMAN-KERN RIVER 66 kV PROJECT**

**CULTURAL RESOURCES APE**

ARCADIS | SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company

FIGURESET 5.5-1.b

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-5-1_Cultural_Resources_APE.mxd 6/16/2021




## Legend

- Substation
- Mile Posts
- Segment 1
- APE
- Segment 2
- Counties
- Segment 4
- Segment 5

APE = Area of Potential Effect

0 2.5 5
Miles

N

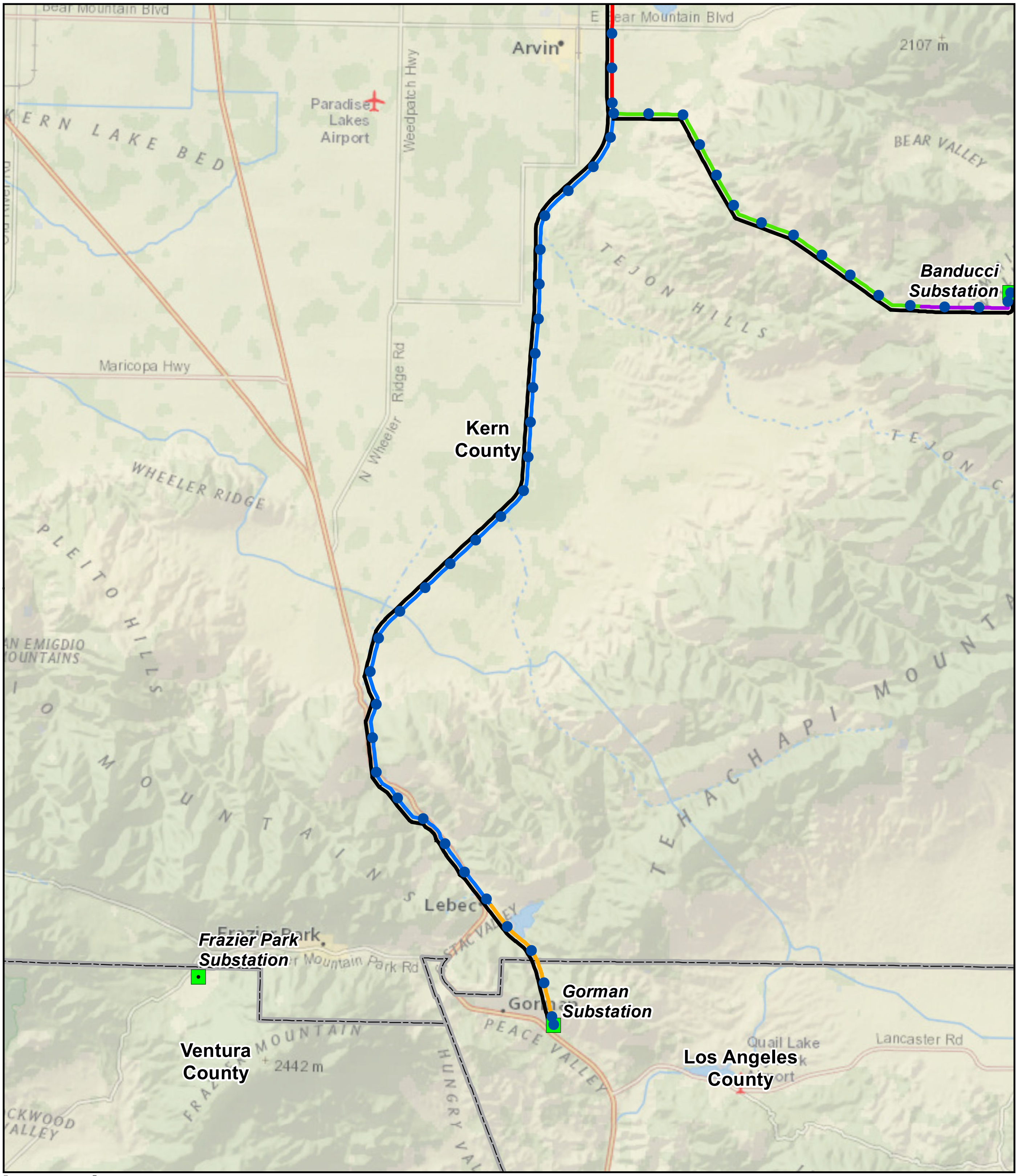
**GORMAN-KERN RIVER 66 kV PROJECT**

**CULTURAL RESOURCES APE**

ARCADIS | SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL® Company

FIGURESET 5.5-1.c

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-5-1_Cultural_Resources_APE.mxd 6/16/2021




T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-5-1_Cultural_Resources_APE.mxd 6/16/2021

## Legend

- Substation
- Mile Posts
- Segment 1
- APE
- Segment 2
- Counties
- Segment 3
- Segment 4
- Segment 5

APE = Area of Potential Effect

0 4 8
Miles

N

# GORMAN-KERN RIVER 66 kV PROJECT

## CULTURAL RESOURCES APE

ARCADIS
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURESET
5.5-1.d

# 5.6 Energy

This Section of the PEA describes the energy-consumption attributes of the GKR Project, as well as an assessment of impacts that have the potential to occur during construction and operation of the GKR Project.

## 5.6.1 Environmental Setting

As described in Chapter 3—Project Description, construction, and operations and maintenance, of the GKR Project would require the consumption of energy in the form of liquid fuels (gasoline and diesel). Section 5.6.4.3 addresses the estimated volumes of gasoline and diesel consumption associated with construction of the GKR Project.

### *5.6.1.1 Existing Energy Use*

Station light and power equipment at the existing SCE substations included under the GKR Project represent the only existing consumption of electricity by the facilities associated with the GKR Project. Gasoline and diesel fuels consumed during O&M activities represent the only other existing energy use related to the facilities associated with the GKR Project. Line losses are ignored as these do not represent a use of energy, but rather a loss of energy.

## 5.6.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the GKR Project.

### *5.6.2.1 Regulatory Setting*

#### 5.6.2.1.1 Federal

There are no Federal plans or regulations applicable to the GKR Project.

#### 5.6.2.1.2 State

Senate Bill 100, signed into law in September 2018, amends the California Renewables Portfolio Standard Program. The Program requires the CPUC to establish a renewables portfolio standard requiring all retail sellers to procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt-hours of those products sold to their retail end-use customers achieve 25 percent of retail sales by December 31, 2016, 33 percent by December 31, 2020, 40 percent by December 31, 2024, 50 percent by December 31, 2026, and 60 percent by December 31, 2030. The program additionally requires each local publicly-owned electric utility to procure a minimum quantity of electricity products from eligible renewable energy resources to achieve the procurement requirements established by the program.

#### 5.6.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the GKR Project. Pursuant to GO 131-D, Section XIV.B, “Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC’s jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters.” Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities’ regulations are not applicable as the county and cities do not have jurisdiction over the GKR Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

##### *5.6.2.1.3.1 Kern County General Plan, Energy Element*

The Kern County General Plan's Energy Element contains goals, policies, and implementation measures that address renewable energy development in the County; none are relevant or applicable to the GKR Project. There are no goals, policies, or implementation measures related to energy efficiency that are applicable or relevant to the GKR Project.

##### *5.6.2.1.3.2 Los Angeles County General Plan*

The Los Angeles County General Plan contains goals, policies, and implementation measures that encourage energy efficiency in the County; none are relevant or applicable to the GKR Project. There are no goals, policies, or implementation measures related to energy efficiency that are applicable or relevant to the GKR Project.

##### *5.6.2.1.3.3 City of Arvin General Plan*

The City of Arvin's General Plan contains policies and strategies intended to reduce consumption and efficiently use energy resources; none are applicable or relevant to the GKR Project.

##### *5.6.2.1.3.4 City of Bakersfield General Plan*

The City's General Plan Update: Existing Conditions, Constrains and Opportunities Report recommends policies and strategies intended to reduce consumption and efficiently use energy resources; none are applicable or relevant to the GKR Project.

## 5.6.3 Impact Questions

### *5.6.3.1 Impact Questions*

The significance criteria for assessing the impacts to public services are derived from the CEQA Environmental Checklist. According to the CEQA Checklist, a project would cause a potentially significant impact if it would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

### *5.6.3.2 Additional CEQA Impact Question*

The CPUC has identified one additional CEQA impact question:

- Would the project add capacity for the purpose of serving a nonrenewable energy resource?

## 5.6.4 Impact Analysis

### *5.6.4.1 Impact Analysis*

#### 5.6.4.1.1 Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

##### *5.6.4.1.1.1 Construction*

**Less than Significant Impact.** The GKR Project's consumption of energy resources during construction is necessary to remediate discrepancies identified through SCE's TLRR effort along the 66 kV circuits included in the GKR Project.

The rebuilt subtransmission lines would serve the same purpose in the regional transmission system as the existing lines and would not change the location or intensity of energy consumption during operations.

Construction of the project would require consumption of fuel to run construction vehicles, equipment, and helicopters. However, GKR Project construction activities would be short-term and temporary. Further, implementation of APM NOI-1 (see Section 5.13), which minimizes unnecessary construction vehicle idling time, would further reduce energy consumption. Therefore, impacts would be less than significant.

###### *5.6.4.1.1.2 Operations*

**No Impact.** As presented in Chapter 3—Project Description, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project. No energy additional to that which is presently consumed will be consumed and therefore no impacts would be realized under this criterion during operations and maintenance.

#### 5.6.4.1.2 Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

###### *5.6.4.1.2.1 Construction*

**No Impact.** The GKR Project entails the reconstruction of existing subtransmission lines in or immediately adjacent to these subtransmission lines' existing alignments, and replacement of individual poles immediately adjacent to existing poles. The GKR Project is not designed to facilitate or encourage renewable energy project development, and because it would be constructed in or immediately adjacent to existing alignments, would not impede the development of renewable energy projects. As stated in Section 5.6.2 above, none of the local plans that address energy efficiency are applicable to the GKR Project. Therefore, the GKR Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

###### *5.6.4.1.2.2 Operations*

**No Impact.** As presented in Chapter 3—Project Description, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project. Therefore, operation of the GKR Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

#### 5.6.4.1.3 Would the project add capacity for the purpose of serving a nonrenewable energy resource?

###### *5.6.4.1.3.1 Construction*

**No Impact.** Serving a nonrenewable energy resource is not an objective of the GKR Project; therefore, there would be no impact under this criterion.

###### *5.6.4.1.3.2 Operations*

**No Impact.** Serving a nonrenewable energy resource is not an objective of the GKR Project; therefore, there would be no impact under this criterion.

### 5.6.4.2 Nonrenewable Energy

The GKR Project is not proposed to provide a new interconnection to, or to supply a new, renewable or non-renewable energy project.

The subtransmission lines included under the GKR Project are extant and are part of SCE's interconnected transmission and subtransmission system. Because SCE operates an interconnected grid, all renewable and non-renewable energy projects connected to any one portion of that grid may be considered to be interconnected to the subtransmission lines included under the GKR Project. Similarly, all such renewable and non-renewable energy project may be considered to be supplied by the GKR Project.

### 5.6.4.3 Fuels and Energy Use

#### 5.6.4.3.1 Total Energy Requirements of the GKR Project by Fuel Type and End Use

Table 5.6-1 provides an estimation of the amount of fuels (gasoline, diesel, and helicopter fuel) that would be used during construction of the GKR Project.

As presented in Chapter 3—Project Description, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project. Therefore, operation of the GKR Project would not result in additional consumption of fuels.

**Table 5.6-1. Fuel Consumption**

| Primary Equipment Description | Diesel (gallons) | Gasoline (gallons) | Jet A (gallons) |
|---|---|---|---|
| **Worker Vehicles** | | | |
| Passenger Vehicles | 225 | 33,789 | 0 |
| **Construction Vehicles** | | | |
| 1-Ton Truck, 4x4 | 50,564 | 0 | 0 |
| 3/4-Ton Truck, 4x4 | - | 14,790 | 0 |
| Auger Truck | 477 | 0 | 0 |
| Boom/Crane Truck | 6,322 | 0 | 0 |
| Concrete Mixer Truck | 584 | 0 | 0 |
| Dump Truck | 5,797 | 0 | 0 |
| Extendable Flat Bed Pole Truck | 591 | 0 | 0 |
| Flat Bed Pole Truck | 4,538 | 0 | 0 |
| Lowboy Truck/Trailer | 2,483 | 0 | 0 |
| Manlift/Bucket Truck | 1,798 | 0 | 0 |
| Pipe Truck/Trailer | 23 | 0 | 0 |
| Static Truck/Tensioner | 329 | 0 | 0 |
| Truck, Semi-Tractor | 12,868 | 0 | 0 |
| Water Truck | 10,502 | 0 | 0 |
| Wire Truck/Trailer | 330 | 0 | 0 |
| **Construction Equipment** | | | |
| Backhoe/Front Loader | 56,473 | 0 | 0 |
| Bull Wheel Puller | 8,272 | 0 | 0 |
| Compressor Trailer | 11,291 | 0 | 0 |
| Conductor Splicing Rig | 4,174 | 0 | 0 |
| Drum Type Compactor | 2,570 | 0 | 0 |
| Excavator | 41,063 | 0 | 0 |
| Fiber Splicing Lab | 3,578 | 0 | 0 |
| Generator | 45,791 | 0 | 0 |

**Table 5.6-1. Fuel Consumption**

| Primary Equipment Description | Diesel (gallons) | Gasoline (gallons) | Jet A (gallons) |
|---|---|---|---|
| Hydraulic Rewind Puller | 16,468 | 0 | 0 |
| Motor Grader | 5,175 | 0 | 0 |
| R/T Crane | 4,658 | 0 | 0 |
| R/T Crane (M) | 25,214 | 0 | 0 |
| R/T Crane ( L) | 12,907 | 0 | 0 |
| R/T Forklift | 43,292 | 0 | 0 |
| Sock Line Puller | 3,578 | 0 | 0 |
| Track Type Dozer | 3,931 | 0 | 0 |
| **Helicopter and Support** | | | |
| Light Helicopter | 0 | 0 | 24,416 |
| Medium Helicopter | 0 | 0 | 49,128 |
| Heavy Helicopter | 0 | 0 | 30,888 |
| Helicopter Support Truck | 320 | 0 | 0 |
| Jet A Fuel Truck | 320 | 0 | 0 |

#### 5.6.4.3.2 Energy Conservation Equipment and Design Features

There is no equipment, and there are no design features, that are included in the GKR Project the purpose of which is primarily or solely energy conservation.

#### 5.6.4.3.3 Energy Supplies That Would Serve the Project

Construction of the GKR Project would not require any new energy supplies; energy necessary during the construction phase would be obtained from existing energy purveyors. Operation of the GKR Project would not result in any increased energy demand compared to the energy demand associated with the operation of the existing GKR Project infrastructure.

### 5.6.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for Energy.

Page intentionally left blank.

# 5.7 Geology, Soils, and Paleontological Resources

This Section of the PEA describes the geology and soils in the area of the GKR Project. The potential impacts are also discussed.

## 5.7.1 Environmental Setting

### *5.7.1.1 Regional and Local Geologic Setting*

The GKR Project is located in the southeastern part of the San Joaquin Valley, and in adjacent mountainous areas to the north, east, and south. It is located within the following geologic provinces:

- Central Valley Geologic Province. The central part of the GKR Project, including most of Segments 1 and 2, and the western end of Segment 4, runs across the San Joaquin Valley, a broad alluvial valley with little topographic relief.
- Sierra Nevada Geologic Province. The northern and eastern parts of the GKR Project run through the Sierra Nevada and the adjacent foothills. To the north, this includes the northern end of Segment 1, which follows the narrow canyon of the Kern River. To the east, this includes most of Segment 4 and all of Segment 5. To the south, the southern part of Segment 2 is located at the western edge of the Tehachapi Mountains, which are often regarded as a southern extension of the Sierra Nevada.
- Mojave Desert Geologic Province. The southernmost part of the GKR Project (Segment 3), is located between the Garlock and San Andreas Faults, in the western tip of the Mojave Desert Geologic Province.

#### 5.7.1.1.1 Physiography

The principal physiographic areas crossed by Segments of the GKR Project are shown in Figure 5.7-1 and described below. The boundaries between these areas are not sharply defined, and so the descriptions are general.

##### *5.7.1.1.1.1 Kern River Canyon (Segment 1)*

The northern terminus of Segment 1, which also represents the northernmost point of the project, is at the existing Kern River 1 Hydroelectric Substation. The existing Kern River 1 Hydroelectric Substation is located at the base of the Kern River Canyon within the southern Sierra Nevada, adjacent to the Kern River and to California State Route 178. The substation is located at an elevation of approximately 950 ft amsl.

The GKR Project alignment runs through Kern River Canyon for approximately 1.5 miles to the southwest. This represents the general downhill direction; however, the project ascends the steep slopes on the southeastern side of the canyon, reaching a maximum elevation of approximately 1,600 ft amsl. Near the mouth of the canyon, the GKR Project alignment descends steeply to foothills between the Sierra Nevada and the San Joaquin Valley, at an elevation of approximately 800 ft amsl.

Segment 1 then turns towards the south, away from the Kern River and California State Route 178. It runs generally southward through the foothills for approximately 6.5 miles, crossing Cottonwood Creek. The maximum project elevation in the foothills is approximately 1,300 ft amsl. The alignment then descends from the foothills to the floor of the San Joaquin Valley, at an elevation of approximately 850 ft amsl.

##### *5.7.1.1.1.2 San Joaquin Valley (Segments 1, 2 and 4)*

The southern part of Segment 1 runs south across the floor of the San Joaquin Valley for approximately 12 miles, gradually descending in elevation. It successively crosses the Union Pacific Railroad right-of-way, California State Route 58, Caliente Creek, the Arvin-Edison Canal, and California State Route 223. This area represents the southeastern end of the San Joaquin Valley.

Segment 1 terminates at ”the T” with Segments 2 and 4, located approximately 2 miles southeast of Arvin and approximately one mile northwest of the Tejon Hills. The elevation at this point is approximately 400 ft amsl, which represents the lowest point along the GKR Project route. The western Terminus of Segment 4 is located at this point.

The northern terminus of Segment 2 is located at “the T” with Segments 1 and 4. It continues south along Tower Line Road for approximately 0.5 mile, then turns to the southwest as it approaches the Tejon Hills. Segment 2 continues southwest for approximately 3.5 miles; it crosses the Arvin-Edison Water Storage District Canal, runs along the base of the Tejon Hills at Comanche Point, and then crosses Tejon Creek at an elevation of approximately 575 ft amsl.

After passing the Tejon Hills, Segment 2 continues in a generally southward direction across the floor of the San Joaquin Valley, gradually gaining in elevation. From Tejon Creek, it runs roughly southward for approximately 7.5 miles, crossing El Paso Creek. It then turns towards the southwest for approximately 5.5 miles, crossing the Wheeler Ridge-Maricopa Water Storage District 850 Canal and the California Aqueduct. Segment 2 then runs to the south-southwest for approximately 1.5 miles, where it reaches the mouth of Grapevine Canyon, located at the southern end of the San Joaquin Valley at an elevation of approximately 1,600 ft amsl.

Segment 4 runs eastward through the San Joaquin Valley for approximately 1.5 miles, crossing the Arvin-Edison Canal and reaching the edge of the Tejon Hills, which border the southeastern edge of the San Joaquin Valley.

*5.7.1.1.1.3 Lebec-Gorman Area (Segments 2 and 3)*

Segment 2 leaves the San Joaquin Valley as it enters Grapevine Canyon, a roughly north-south trending canyon that separates the San Emigdio Mountains (to the west) and the Tehachapi Mountains (to the east). In general, the floor of the canyon is occupied by Interstate 5, while Segment 2 runs along on the ridges and slopes above the canyon.

Segment 2 initially runs along the ridges and slopes on the eastern side of the canyon, reaching a maximum elevation of approximately 2,850 ft amsl. After approximately 3 miles, it makes an initial crossing of Interstate 5 to the western side of the canyon. Grapevine Canyon then turns to the southeast. The project alignment runs along the ridges and slopes on the southwestern side of the canyon for approximately 2 miles, reaching a maximum elevation of approximately 3,550 ft amsl.

The southeastern end of Grapevine Canyon opens into the broader Castac Valley. The project alignment drops to the floor of Castac Valley near Fort Tejon State Historic Park, at an elevation of approximately 3,200 ft amsl.

The remainder of Segment 2 continues to the southeast in Castac Valley, gradually gaining in elevation, while running generally parallel to Interstate 5 and Grapevine Creek. Segment 2 makes a second crossing of Interstate 5 at Fort Tejon State Historic Park. It runs along the northeastern side of Interstate 5 for approximately 0.4 miles, passing El Tejon School. It then makes a third crossing of Interstate 5, and continues near the southwestern side of the freeway for approximately 1.3 miles, reaching a maximum elevation of approximately 3,400 ft amsl.

Segment 2 then makes a fourth and final crossing of Interstate 5, closely approaching the base of the Tehachapi Mountains. It then continues southeast across Castac Valley for approximately 1.3 miles, generally parallel to the northeastern side of the freeway. The southern terminus of Segment 2 is located at the intersection with Bear Trap Road, which also represents the northern terminus of Segment 3. This point is approximately 900 feet northeast of Interstate 5, near the community of Lebec, at an elevation of approximately 3,500 ft amsl.

The northern terminus of Segment 3 is located near the community of Lebec, at the intersection of the GKR Project alignment with Bear Trap Road. This point is located approximately 900 feet northeast of Interstate 5, at an elevation of approximately 3,500 ft amsl. Segment 3 runs southeast from Bear Trap Road for approximately 1.5 miles across the floor of Castac Valley, skirting the southwest edge of Castac Lake, a small saline lake. This lake formed as a sag pond associated with the Garlock fault zone (DWR 2004b). Segment 3 then enters the Tehachapi Mountains at Crane Canyon, at an elevation of approximately 3,500 ft amsl.

Segment 3 ascends the southwestern slopes of Crane Canyon and crosses the Kern-Los Angeles County line. It gains elevation for approximately 2.0 miles, reaching a maximum elevation of approximately 4,550 ft amsl at the top of the ridge above Crane Canyon. This represents the highest point along the GKR Project route.

Segment 3 then drops steeply down a south-facing slope for approximately 0.5 miles. Its southern terminus is at the Gorman Substation, located at the base of the Tehachapi Mountains at an elevation of approximately 3,600 ft amsl. The substation is located on Gorman Post Road, approximately 1.5 miles east of the community of Gorman and approximately 900 feet northeast of Interstate 5.

*5.7.1.1.1.4 Tejon Hills (Segments 4 and 5)*

After entering the Tejon Hills, Segment 4 runs eastward for approximately 0.5 miles. It then turns to the southeast and continues through the Tejon Hills for approximately 9.4 miles. The GKR Project alignment crosses a series of ridges and valleys in this area, including Little Sycamore Canyon, Horsethief Flat, and Comanche Creek, while generally gaining in elevation.

Segment 4 terminates in the community of Stallion Springs, located on the eastern side of the Tejon Hills. It reaches a maximum elevation of approximately 4,100 ft amsl in Stallion Springs. The eastern terminus of Segment 4, which also represents the western terminus of Segment 5, is located near the intersection of Comanche Point, Longhorn Lane, and Banducci Road, at an elevation of approximately 3,850 ft amsl.

Segment 5 runs eastward from this location, generally following Banducci Road. It descends for approximately 0.6 miles to the foot of the Tejon Hills at Chanac Creek.

*5.7.1.1.1.5 Cummings Valley (Segment 5)*

After leaving the Tejon Hills, Segment 5 crosses Chanac Creek and enters Cummings Valley at an elevation of approximately 3,750 ft amsl. It follows Banducci Road eastward across Cummings Valley for approximately 1.9 miles. Segment 5 turns northward at the intersection with Pellisier Road and continues for approximately 0.5 miles to the Banducci Substation. This substation is located near the intersection of Pellisier and Dale Roads, at an elevation of approximately 3,850 ft amsl. The Banducci Substation represents the eastern termination of Segment 5.

### *5.7.1.2 Seismic Hazards*

#### 5.7.1.2.1 Faults and Seismicity

The project crosses or runs close to numerous active faults as identified by the USGS (USGS; 2019c). These faults are shown in Figure 5.7-2; the faults and their associated properties are summarized in Table 5.7-1.

The most significant risks of future activity are associated with the youngest faults, which are designated as "Historical" or "Holocene" faults on Figure 5.7-2; these are commonly termed "active faults." The term "Holocene," as used on Figure 5.7-2, includes faults that have been active within approximately the past 15,000 years before present (which includes latest Pleistocene faults as defined by current geological time scales).

There is a lower risk of future activity associated with older Quaternary faults, which are designated as "Late Quaternary" or "Quaternary" on Figure 5.7-2; these are commonly termed "potentially active faults." Pre-Quaternary faults are also shown on Figure 5.7-2, but these are not generally regarded as active or potentially active.

The GKR Project is located in a seismically-active area with numerous Holocene faults (Figure 5.7-2) that have been identified as potential seismic sources by the California Geological Survey ([CGS] 2017b) and the U.S. Geological Survey (USGS 2019a, 2019b). Holocene faults are considered to have been active within approximately the past 11,000 to 15,000 years. Table 5.7-1 includes additional information about the Holocene faults crossed by the GKR Project alignment, including fault type, fault and section length, slip rate, and maximum estimated moment magnitude.

The active faults located within 10 miles of the GKR Project are shown in Figure 5.7-2 and discussed in more detail below. The active faults are listed under the closest Segment.

*5.7.1.2.1.1 Segment 1*

USGS (2019c) recognizes the following active ("Historical" or "Holocene") fault in the vicinity of Segment 1:

- **Unnamed ground breaks of 1952 earthquake.** Segment 1 crosses these historical ground breaks associated with the 1952 Kern County Earthquake in the foothills to the east of Bakersfield.

Older Quaternary faults also occur near Segment 1, but they are not classified as active in the project vicinity. These include the Poso Creek, Jewett, Kern Gorge and Edison Faults in the northern part of Segment 1, and an unnamed fault near "the T" at the southern end of Segment 1.

*5.7.1.2.1.2 Segment 2*

USGS (2019c) recognizes the following active faults in the vicinity of Segment 2:

- **White Wolf fault zone.** Segment 2 crosses the historically active White Wolf fault zone at the base of the Tejon Hills; Segment 4 also crosses this fault zone. This fault zone was the source of a major historical earthquake, the July 21, 1952 Kern County Earthquake, which had an estimated moment magnitude of 7.5 (SCEC 2019a). Ground surface ruptures associated with this earthquake have been mapped in the area of the Segment 2 crossing.
- **Wheeler Ridge Fault.** Segment 2 is located within 10 miles of the Wheeler Ridge fault zone, which is located approximately seven miles northwest of the entrance to Grapevine Canyon.
- **Pleito fault zone.** Segment 2 crosses the Pleito fault zone at the southern end of the San Joaquin Valley, near the entrance to Grapevine Canyon.

Older Quaternary faults also occur near Segment 2, but they are not classified as active in the project vicinity. These include an unnamed fault near "the T" at the northern end of Segment 2, the Wheeler Ridge and Springs faults in the central part, and an unnamed fault in the San Emigdio Mountains to the west of the southern part.

**Table 5.7-1. Mapped Active Faults and Fault Properties**

| Project Segment | USGS Fault Name (USGS Section Name) *[Non-USGS Identifying Data]* | Fault Activity | Fault Type | Fault Length (Section Length) (miles) | Slip Rate (mm/yr) | Maximum Moment Magnitude | Distance to GKR Project Alignment (Miles) |
|---|---|---|---|---|---|---|---|
| 1 | Unnamed ground breaks of 1952 earthquake | historically active (1952) | unspecified | unspecified | unspecified | unspecified | 0 |
| 2, 4 | White Wolf fault zone | historically active (1952) | reverse | 39 | 1.0 to 5.0 | 7.0 – 7.2 | 0 |
| 2 | Wheeler Ridge fault zone | active ( <15,000 years BP) | reverse | unspecified | unspecified | unspecified | 5 |
| 2 | Pleito fault zone (Eastern Pleito section) | active ( <15,000 years BP) | reverse | 38 (16) | 1.0 to 5.0 | 7.0 – 7.1 | 0 |
| 3 | Garlock fault zone (Western Garlock section) | active ( <15,000 years BP) | left-lateral | 160 (68) | > 5.0 | 7.3 | 0 |
| 3 | San Andreas fault zone (Cholame-Carrizo section) | historically active (1857, 1916) | right-lateral | 672 (125) | > 5.0 | 7.4 | 0 |

Source: Data from USGS (2019c); maximum moment magnitudes from USGS (2019b)

Page intentionally left blank.

##### *5.7.1.2.1.3 Segment 3*

USGS (2019c) recognizes the following active faults in the vicinity of Segment 3:

- **Garlock fault zone.** Segment 3 crosses multiple strands of the active Garlock fault zone in the Castac Valley along the northwestern edge of the Tehachapi Mountains.
- **San Andreas fault zone.** The active San Andreas fault zone runs along the southwestern edge of the Tehachapi Mountains. The southeastern end of Segment 3, including the Gorman Substation, is located on or near this fault zone.

Older Quaternary faults also occur near Segment 3, but they are not classified as active in the project vicinity. These include the Pine fault, the Frazier Mountain, Dry Creek, and Alamo thrust faults, and the San Gabriel fault.

##### *5.7.1.2.1.4 Segments 4 and 5*

USGS (2019c) recognizes the following active fault in the vicinity of Segments 4 and 5:

- **White Wolf fault zone.** Segment 4 crosses the historically active White Wolf fault zone at the base of the Tejon Hills; Segment 2 also crosses this fault zone. This fault zone was the source of a major historical earthquake, the July 21, 1952 Kern County Earthquake, which had an estimated moment magnitude of 7.5 (SCEC 2019a). Ground surface ruptures associated with this earthquake have been mapped in the area of the Segment 4 crossing.

Older Quaternary faults also occur near Segments 4 and 5, but they are not classified as active in the project vicinity. These include the Springs fault to the southwest and an unnamed fault to the northeast.

#### 5.7.1.2.2 Surface Fault Rupture

There is a risk of surface fault rupture associated with the active (Holocene or Late Pleistocene) faults found along the GKR Project alignment. The State of California has established “Alquist-Priolo Special Studies Zones” (AP SSZs) in areas where such faults pose a risk of surface displacement (CGS 2018a, 2018b). The project passes through several SSZs (Figure 5.7-3) associated with the local active faults:

- **Unnamed ground breaks of 1952 earthquake.** Segment 1 passes through five SSZs associated with these ground breaks to the east of Bakersfield.
- **White Wolf fault zone.** Segments 2 and 4 separately cross an SSZ associated with the White Wolf fault zone near the northwestern edge of the Tejon Hills.
- **Pleito fault zone.** Segment 2 crosses an SSZ associated with the Pleito fault zone at the southern end of the San Joaquin Valley, near the entrance to Grapevine Canyon.
- **Garlock fault zone.** Segment 3 crosses an SSZ associated with the Garlock fault zone in the Castac Valley near the northwestern edge of the Tehachapi Mountains.
- **San Andreas fault zone.** Segment 3 enters an SSZ associated with the San Andreas fault zone at the base of the Tehachapi Mountains. The Gorman Substation is located within this SSZ.

There may also be a risk of surface fault rupture in other areas, outside of Alquist-Priolo Zones, where active faults have not been identified or are incompletely studied.

#### 5.7.1.2.3 Seismic Ground Shaking

The expected intermediate period (1.0 second) ground motions with a 2 percent exceedance probability in 50 years, based on Branum et al. (2016) and CGS (2016), are shown on Figureset 5.7-4. This represents a recurrence interval of approximately 2,500 years. The estimate was calculated considering historical earthquakes, slip rates on major faults and deformation throughout the region, and the potential for amplification of seismic waves by near-surface geologic materials.

The lowest estimated ground motion values along the GKR Project alignment, approximately 25 percent of standard gravity (or 0.25 g), occur in the Kern River Canyon area in the northern part of Segment 1. Most of this area is characterized by consolidated bedrock and is relatively distant from Holocene faults. The existing Kern River 1 Hydroelectric Substation is located at the base of the Canyon, but Wilkerson (2017) indicated that it was constructed on granitic bedrock.

The highest estimated values along the GKR Project alignment are in valley areas along Segment 3, which is characterized by unconsolidated sediments and which is located in close proximity to the Garlock and San Andreas fault zones. The highest values, up to 1.95 g, occur in parts of Crane Canyon (Segment 3). The Gorman Substation is located directly above the San Andreas fault zone in an area with estimated ground motion values of 1.85 to 1.95 g.

#### 5.7.1.2.4 Liquefaction

Liquefaction occurs where strong ground motions produce a rise in pore-water pressures that in turn causes granular material to briefly lose strength and liquefy. This can lead to settlement, lateral spreading, and damage to structures, even in areas of flat topography. Ground motions in excess of 0.1g can potentially trigger liquefaction in areas of unconsolidated granular sediment and shallow groundwater (Southern California Earthquake Center 1999). The risk of liquefaction is highest in areas with high predicted ground motions, unconsolidated sediments, and shallow groundwater.

There is a potential risk of ground motions above 0.1 g throughout the project area, and the local valleys may contain unconsolidated granular sediment. However, most of the project area is not characterized by shallow groundwater. The absence of shallow groundwater reduces the local liquefaction risk.

Liquefaction susceptibility zones in Kern County were mapped at low resolution by USGS (2008). In general, the mountainous areas in Kern County were considered to have low or no susceptibility to liquefaction, while the valley areas were considered to have low to moderate susceptibility.

No high-resolution liquefaction hazard maps were found for the project area. However, certain valley areas along the GKR Project alignment may be characterized by both unconsolidated sediments and shallow groundwater; potential liquefaction risks may exist in these areas. Potential areas of concern include the following:

- **Kern River Canyon.** Shallow groundwater is likely to occur in alluvial sediments at the base of the canyon near the Kern River. Segment 1 runs close to the river in two areas: at the existing Kern River 1 Hydroelectric Substation, and near the mouth of Kern Canyon. Potential liquefaction risks may exist in these areas, although Wilkerson (2017) indicated that the existing Kern River 1 Hydroelectric Substation was constructed on granitic bedrock.
- **Cummings Valley.** This valley is considered “subject to high risk of liquefaction” by Kern County (2010). The mapped areas of liquefaction risk include most of Segment 5. The western part of Segment 5 in the Tejon Hills is outside the mapped area of liquefaction risk.

- **Castac Valley.** Little relevant information is available, but there is evidence of shallow groundwater near Castac Lake (EKI 2019), which is close to Segment 3.

In addition, localized liquefaction risks could exist near creek crossings (such as the Caliente Creek crossing in Segment 1). Horsethief Flat was identified as a small area of potential liquefaction risk by Kern County (2010).

#### 5.7.1.2.5 Slope Instability

Much of the GKR Project alignment is in valley areas. The hazards of landslides, rockfalls, slope creep, or other slope-related concerns are low to absent in these areas as they are characterized by relatively flat topography.

The susceptibility to deep-seated landslides, based on Wills et al. (2011) and CGS (2018c), is shown in Figureset 5.7-5. The estimated values indicate the relative likelihood of deep landsliding based on regional estimates of rock strength and steepness of slopes. Localized areas of relatively steep slopes and increased landslide hazards occur where the GKR Project alignment in or near hills and mountains, such as the Kern River Canyon area and the adjacent foothills (Segment 1), Grapevine Canyon (Segment 2), the Tehachapi Mountains (Segment 3), and the Tejon Hills (Segments 4 and 5).

The California Geological Survey's Seismic Hazard Zonation Program includes mapping of earthquake induced landslide zones. However, this program focuses on the major metropolitan areas of California; it has not addressed the GKR Project area.

There are historical records of significant rockfalls and landslides in three parts of the project alignment, Kern River Canyon (Segment 1), Grapevine Canyon (Segment 2), and the Gorman Substation area (Segment 3). These three areas are discussed in more detail below.

##### *5.7.1.2.5.1 Kern River Canyon*

The northern part of Segment 1, including the Kern River 1 Hydroelectric Substation, is located within Kern River Canyon. There is extensive evidence of rockfalls and landslides within this canyon:

> "The Kern Gorge section of the lower Kern River (along Hwy 178, northeast of Bakersfield, CA) has significant accumulations of large boulders (>4 m diameter) that were likely transported to the river by rockfall and/or landslide events. In several places along the steep hills of the gorge there are visible landslide scars." (Walter and Krugh 2018)

Some of these landslide scars occur downstream from the existing Kern River 1 Hydroelectric Substation. Landslides in this area could affect the substation indirectly by blocking the Kern River and causing flooding at points upstream:

> "…these old landslides might reactivate and block the Kern River Canyon, creating a long lake behind the landslide" (Wilkerson 2017).

Landslide or rockfalls due to storm events commonly occur in the Kern River Canyon. Ground motions associated with earthquakes could also potentially trigger landslides or rockfalls in the project area. Seismically induced landslides are most commonly associated with earthquakes of magnitude 4.0 or more (Keefer 1984). The active faults in the project area could potentially generate earthquakes of greater magnitude (Table 5.7-1).

##### *5.7.1.2.5.2 Grapevine Canyon*

The southern part of Segment 2 ascends Grapevine Canyon, between the San Emigdio and Tehachapi Mountains. Extensive Quaternary (Holocene to late Pleistocene) landslide deposits have been mapped along the sides of Grapevine Canyon (Olson 2014). Parts of the GKR Project alignment are located on mapped landslide deposits.

Significant debris flows, which have resulted in the closure of Interstate 5, have historically occurred in Grapevine Canyon. Such events occurred following heavy rains in February 1978 (Cronin et al. 1990) and October 2015 (Los Angeles Times 2015).

##### *5.7.1.2.5.3 Gorman Substation Area*

The southern portion of Segment 3 also appears to be at particular risk of seismically induced landslides. The GKR Project alignment in this area (including the existing Gorman Substation) drops steeply down the slope Tehachapi Mountains, and it directly overlies the San Andreas fault, which is capable of generating particularly strong local ground motions.

Numerous landslides have been mapped on the slope of the Tehachapi Mountains, particularly near drainages (Olson and Swanson 2017). The closest mapped landslide is located approximately 1,300 feet northwest of the existing Gorman Substation, on the west side of an unnamed drainage. This landslide is approximately 500 feet west of the closest parts of the project alignment.

#### 5.7.1.2.6 Soil Erosion

The USDA has developed a rating, known as the "erodibility factor" or "K-factor" to evaluate the susceptibility of soils to erosion by water. The soils along the GKR Project alignment typically have low to moderate K-factor ratings (0.4 or lower). The only area with a higher erodibility rating is on Segment 1 near the Kern River, southwest of the mouth of Kern Canyon. The affected area (which has a K-factor rating of 0.44) represents approximately 0.8 percent of the project route.

Wind erosion is similarly most prevalent in silty and fine sandy soils with disturbed vegetation. Dust storms associated with wind erosion are identified as a hazard in Kern County (Kern County 2012). Wind erodibility groups (WEGs) are made up of soils that have similar properties affecting their susceptibility to wind erosion. The soils assigned to WEG 1 are the most susceptible to wind erosion, and those assigned to Group 8 are the least susceptible. Table 5.7-4 presents the relative WEG presence of soils along the GKR Project alignment.

#### 5.7.1.2.7 Collapsible Soils

Soil collapse occurs when water enters the void space between soil particles and weakens the bonds between particles. The weight of overlying soils or structures causes the soil particles to shift, filling the voids and resulting in a reduced overall soil volume. Collapse of the soil at depth is translated to downward motion of the surface, causing differential settlement. Soils susceptible to collapse typically contain a large amount of void space (porosity), low bulk density, low clay content (less than 30 percent and most commonly 10 to 15 percent), and have formed rapidly in arid or semiarid climates, especially on alluvial fans (Scheffe and Lacy 2004). No records of soil collapse were identified near the GKR Project alignment.

#### 5.7.1.2.8 Expansive Soils

An expansive soil is any soil that is prone to large volume changes (shrinking and swelling) directly related to changing moisture conditions. The swelling capacity can cause heaving or lifting of structures whilst shrinkage can cause differential settlement.

Linear extensibility percent is the linear expression of the volume difference of natural soil. The linear extensibility percent of a soil is used to identify shrink-swell classes as follows: Low (<3), Moderate (3-6), High (6-9), and Very High (>9). Approximately 0.5 percent of the soils along the GKR Project alignment were classified as High; none were classified as Very High.

#### 5.7.1.2.9 Subsidence

Land subsidence associated with groundwater overdraft is a concern in many valley areas in California. The project crosses parts of six groundwater basins recognized by the California Department of Water Resources (DWR). These basins and the "overall estimated potential for future subsidence" as rated by CDWR (2014) are listed in Table 5.7-2.

**Table 5.7-2. Groundwater Basins and Subsidence Potential**

| Project Segment(s) | CDWR Groundwater Basin or Subbasin | CDWR Basin No. | CDWR Reference | Overall Estimated Potential for Future Subsidence (CDWR 2014) |
|---|---|---|---|---|
| 1, 2, 4 | San Joaquin Valley, Kern County Subbasin | 5-22.14 | 2006b | High |
| 3 | Castac Lake Valley | 5-29 | 2004b | Insufficient Data |
| 5 | Cummings Valley | 5-27 | 2006a | Low |

Subsidence has been recognized as a significant issue in the San Joaquin Valley Groundwater Basin, which is the largest groundwater basin crossed by the GKR Project alignment. The principal cause of subsidence is excessive groundwater extraction:

> "Subsidence [in the San Joaquin Valley is] caused by withdrawal of groundwater in quantities much larger than replacement can occur, causing a decline of the water level. This type of subsidence is of major concern. This practice has lowered the ground level over a large area south of Bakersfield…" (Kern County 2004)

The southern part of Segment 1, the northern part of Segment 2, and the western end of Segment 4 are located near the southeastern end of the San Joaquin Valley in the Kern County Subbasin, to the south of Bakersfield. While subsidence has historically occurred in this area, it is less significant than in other parts of the San Joaquin Valley. In the most affected part of the GKR Project alignment, near the southern end of Segment 1 and northern portion of Segment 2, subsidence was estimated at 1 to 2 feet between 1926 and 1970 (Poland et al. 1975).

### *5.7.1.3 Geologic Units*

Geologic units along the GKR Project alignment are summarized in Table 5.7-3, based on U.S. Geological Survey (USGS 2018) generalized maps for California (Figureset 5.7-6).

**Table 5.7-3. Mapped Geological Units**

| Project Segment | General Location | Rock Type |
|---|---|---|
| 1 | Kern Canyon area of Sierra Nevada | Permian to Tertiary; most Mesozoic granodiorite and quartz monzonite |
| 1 | Kern River Valley | Pliocene to Holocene alluvium and terrace deposits |
| 1 | Sierra foothills | Oligocene to Pleistocene sandstone and conglomerate |
| 1, 2, 4 | San Joaquin Valley | Pliocene to Holocene alluvium and terrace deposits |
| 2 | Tehachapi Mountains | Triassic mudstone and limestone |
| 2, 3 | Tehachapi Mountains | Permit to Tertiary; most Mesozoic granodiorite and quartz monzonite |
| 3 | Castac Lake Valley | Pliocene to Holocene alluvium and terrace deposits |
| 4, 5 | Tejon Hills | Permian to Tertiary; most Mesozoic granodiorite and quartz monzonite |
| 5 | Cummings Valley | Pliocene to Holocene alluvium and terrace deposits |

### *5.7.1.4 Soils*

The soil types occurring along the GKR Project alignment where work would occur, as mapped in the SSURGO database, are listed in Table 5.7-4; their distribution along the GKR Project alignment is shown in Figureset 5.7-7.

The hydrologic group classification is a measure of infiltration rate and runoff potential (NRCS 1986, 2017c). Group A soils have the highest infiltration rates and lowest runoff potentials; they are typically coarse-grained and deep. Conversely, Group D soils have the lowest infiltration rates and highest runoff potential; they are typically fine-grained and shallow, or in areas with high water tables. Groups B and C are intermediate. A range of soil hydrologic groups can be found locally in both mountain and valley areas along the GKR Project alignment.

The wind erodibility group and wind erodibility index are measures of soil susceptibility to wind erosion after cultivation or disturbance (NRCS 2019b). Soils with relatively high levels of wind erodibility (Wind Erodibility Groups 1 and 2) occur within parts of the GKR Project alignment, such as the Calicreek series, which occurs near Caliente Creek in the San Joaquin Valley (Segment 1).

Linear extensibility is a measure of soil shrink-swell potential, or the potential of a soil to change in volume between the wet and dry states (NRCS 2019b). This factor was evaluated using a weighted average of the representative values for all layers in the SSURGO database. Most of the soils along the GKR Project alignment have low to moderate shrink-swell potential (with linear extensibility percent [LEP] values of less than 6.0). Only one soil type along the GKR Project alignment is characterized by high shrink-swell potential: the Xererts-Xerolls complex (LEP value of 7.1) occurs at a few locations near Segment 4 in the Tejon Hills.

### *5.7.1.5 Paleontological Report*

A paleontological technical report is provided as Appendix K. This technical report presents information on documented fossil collection localities within the GKR Project area and a ½-mile buffer; a paleontological resource sensitivity analysis based on published geological mapping and the resource sensitivity of each rock type; and supporting maps.

## Table 5.7-4. Mapped Soil Units and Soil Properties

| Soil Description | | | Soil Occurrence on Alignment | | | Soil Properties | | | |
|---|---|---|---|---|---|---|---|---|---|
| Soil Map Unit | Soil Map Unit Key | Map Unit Name | Kern Sections with Soil | Kern Length with Soils (miles) | Kern Line Percentage with Soil | Hydrologic Group | Wind Erodibility Group | Wind Erodibility Index | Linear Extensibility Percent |
| 980 | 2394575 | Area not surveyed, access denied | 2, 3 | 6.6 | 9.5% | -- | -- | -- | -- |
| 109 | 463813 | Arvin sandy loam, 2 to 5 percent slopes | 2, 4 | 1.6 | 2.3% | A | 5 | 56 | 1.5 |
| 110 | 463814 | Arvin sandy loam, 5 to 9 percent slopes | 4 | 0.3 | 0.4% | A | 5 | 56 | 1.5 |
| 185 | 467308 | Brecken-Cuyama-Pleito complex, 15 to 60 percent slopes | 1 | 3.8 | 5.4% | -- | -- | -- | 2.9 |
| 213ne | 2218090 | Calicreek loamy coarse sand, 0 to 2 percent slopes, occasionally flooded | 1 | 0.3 | 0.4% | A | 2 | 134 | 1.5 |
| 144 | 467286 | Calicreek sandy loam, 0 to 2 percent slopes, occasionally flooded | 1 | 0.1 | 0.2% | -- | -- | -- | 1.5 |
| 193 | 467315 | Chanac-Pleito complex, 2 to 5 percent slopes | 1 | 0.4 | 0.6% | -- | -- | -- | 4.1 |
| 192 | 467314 | Chanac-Pleito complex, 5 to 30 percent slopes | 1 | 0.1 | 0.1% | -- | -- | -- | 3 |
| 880 | 466583 | Chuchupate gravelly sandy loam, 50 to 75 percent slopes | 2 | 0.0 | 0.0% | -- | -- | -- | 2 |
| 267 | 467359 | Cieneba-Vista-Rock outcrop complex, 30 to 60 percent slopes | 1 | 1.1 | 1.6% | -- | -- | -- | 1.5 |
| 145 | 467287 | Delano loamy sand, 0 to 2 percent slopes | 1 | 2.3 | 3.3% | -- | -- | -- | 3.3 |
| 127 | 463831 | DiGiorgio sandy clay loam, 0 to 2 percent slopes | 1, 2, 4 | 1.5 | 2.2% | C | 5 | 56 | 3.8 |
| 240 | 467340 | Dune land | 1 | 0.3 | 0.4% | -- | -- | -- | 1.5 |
| 131 | 463835 | Edmundston gravelly sandy loam, 50 to 75 percent slopes | 4 | 0.4 | 0.6% | A | 5 | 56 | 1.5 |
| 870 | 466584 | Frazier very gravelly sandy loam, 50 to 75 percent slopes | 2 | 1.6 | 2.3% | -- | -- | -- | 2 |
| 461 | 466557 | Geghus-Tecuya association, 30 to 75 percent slopes | 2 | 1.0 | 1.5% | -- | -- | -- | 3.3 |
| GoF2 | 457833 | Gorman sandy loam, 30 to 50 percent slopes, eroded | 3 | 3.0 | 4.3% | -- | -- | -- | 1.5 |
| 191 | 466461 | Guijarral sandy loam, 2 to 9 percent slopes | 2 | 1.1 | 1.5% | -- | -- | -- | 2 |
| 139 | 463843 | Haploxerolls, hilly | 2 | 0.2 | 0.3% | -- | -- | -- | -- |
| 140 | 463844 | Havala sandy loam, 0 to 2 percent slopes | 5 | 1.5 | 2.2% | C | 5 | 56 | 2.6 |
| 860 | 466585 | Hawk gravelly sandy loam, 9 to 15 percent slopes | 2 | 0.7 | 1.1% | -- | -- | -- | 2 |
| 144, 201 | 463848 | Hesperia sandy loam, 0 to 2 percent slopes | 1, 2 | 11.9 | 17.1% | A | 3 | 86 | 1.5 |
| 18 | 465283 | Lodo-Modjeska-Botella families association, 10 to 70 percent slopes | 2 | 0.2 | 0.2% | -- | -- | -- | 2.1 |
| ObC | 457871 | Oak Glen sandy loam, 2 to 9 percent slopes | 3 | 0.1 | 0.1% | A | 3 | 86 | 1.5 |
| 152 | 467291 | Pleito gravelly sandy clay loam, 2 to 5 percent slopes | 1 | 0.8 | 1.1% | -- | -- | -- | 3.4 |
| 201 | 467323 | Pleito-Chanac-Raggulch complex, 5 to 30 percent slopes | 1 | 0.5 | 0.7% | -- | -- | -- | 3.9 |
| 205 | 467324 | Pleito-Trigo-Chanac complex, 15 to 50 percent slopes | 1 | 1.9 | 2.7% | -- | -- | -- | 3.3 |

**Table 5.7-4. Mapped Soil Units and Soil Properties**

| Soil Description | | | Soil Occurrence on Alignment | | | Soil Properties | | | |
|---|---|---|---|---|---|---|---|---|---|
| Soil Map Unit | Soil Map Unit Key | Map Unit Name | Kern Sections with Soil | Kern Length with Soils (miles) | Kern Line Percentage with Soil | Hydrologic Group | Wind Erodibility Group | Wind Erodibility Index | Linear Extensibility Percent |
| 280 | 466479 | Premier sandy loam, 0 to 2 percent slopes | 2 | 1.9 | 2.7% | -- | -- | -- | 2 |
| 165 | 463869 | Psamments-Xerolls complex, nearly level | 2 | 1.9 | 2.7% | A | 2 | 134 | 1.5 |
| 139ne | 2371566 | Riverwash | 1 | 0.5 | 0.8% | -- | -- | -- | -- |
| 173 | 463877 | Rosamond variant sandy loam, 5 to 15 percent slopes | 2 | 1.5 | 2.1% | C | 3 | 86 | 4.1 |
| ShF2 | 457913 | Sheridan sandy loam, 30 to 50 percent slopes, eroded | 3 | 0.6 | 0.9% | B | 3 | 86 | 1.5 |
| 174 | 463878 | Steuber sandy loam, 0 to 2 percent slopes | 5 | 0.4 | 0.6% | A | 5 | 56 | 1.5 |
| 175 | 463879 | Steuber sandy loam, 2 to 5 percent slopes | 4, 5 | 0.7 | 1.0% | A | 5 | 56 | 1.5 |
| 176 | 463880 | Steuber sandy loam, 5 to 9 percent slopes | 3 | 1.4 | 2.0% | A | 5 | 56 | 1.5 |
| 179 | 463883 | Tehachapi sandy loam, 2 to 15 percent slopes | 5 | 0.1 | 0.1% | C | 3 | 86 | 3.2 |
| 187 | 463891 | Tunis sandy loam, 5 to 30 percent slopes | 4 | 0.3 | 0.4% | D | 3 | 86 | 1.5 |
| 188 | 463892 | Tunis-Walong complex, 50 to 75 percent slopes | 4 | 2.1 | 3.0% | D | 5 | 56 | 1.5 |
| 193 | 463897 | Walong sandy loam, 15 to 30 percent slopes | 4, 5 | 4.7 | 6.7% | B | 3 | 86 | 1.5 |
| 194 | 463898 | Walong sandy loam, 30 to 50 percent slopes | 3, 4 | 1.2 | 1.7% | B | 3 | 86 | 1.5 |
| 197 | 463901 | Walong-Arujo sandy loams, 50 to 75 percent slopes | 4 | 0.3 | 0.5% | B | 3 | 86 | 2.7 |
| 198 | 463902 | Walong-Rock outcrop complex, 30 to 75 percent slopes | 4 | 0.8 | 1.1% | B | 3 | 86 | 1.5 |
| 201 | 463905 | Wasioja sandy loam, 2 to 9 percent slopes | 2 | 0.9 | 1.3% | C | 3 | 86 | 2.2 |
| W | 2396075 | Water | 2, 3 | 0.2 | 0.3% | -- | -- | -- | -- |
| 360 | 466487 | Wheelridge gravelly loamy sand, 0 to 2 percent slopes | 2 | 2.3 | 3.4% | -- | -- | -- | 1 |
| 370 | 466489 | Whitewolf loamy sand, 0 to 2 percent slopes | 2 | 0.8 | 1.1% | -- | -- | -- | 1.5 |
| 209 | 467326 | Whitewolf loamy sand, 0 to 2 percent slopes, occasionally flooded | 1 | 1.0 | 1.4% | -- | -- | -- | 1.5 |
| 207 | 467325 | Whitewolf loamy sand, 0 to 2 percent slopes, rarely flooded | 1 | 0.8 | 1.1% | -- | -- | -- | 1.5 |
| 217 | 467333 | Whitewolf-Riverwash complex, 0 to 5 percent slopes, frequently flooded | 1 | 0.2 | 0.3% | -- | -- | -- | 1.5 |
| 205 | 463909 | Xererts-Xerolls complex, steep | 4 | 0.3 | 0.5% | D | 4 | 86 | 7.1 |
| 306 | 467394 | Xerofluvents, occasionally flooded-Riverwash complex, 0 to 5 percent slopes | 1 | 0.1 | 0.1% | -- | -- | -- | 2.5 |
| 211 | 463915 | Xerorthents-Rock outcrop complex, very steep | 4 | 0.6 | 0.9% | D | 6 | 48 | 4 |

### 5.7.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the GKR Project.

#### *5.7.2.1 Regulatory Setting*

##### 5.7.2.1.1 Federal

*5.7.2.1.1.1 Clean Water Act*

Enacted in 1972, the Federal Clean Water Act (CWA; 33 U.S.C. § 1251 et seq.) and subsequent amendments outline the basic protocol for regulating discharges of pollutants to waters of the U.S. It is the primary federal law applicable to water quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. Enforced by the USEPA, it was enacted "… to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The CWA authorizes States to adopt water quality standards and includes programs addressing both point and non-point pollution sources. The CWA also established the NPDES, and provides the USEPA the authority to implement pollution control programs, such as setting wastewater standards for industry and water quality standards for surface waters (see below for a discussion of the NPDES program).

In California, programs and regulatory authority under the CWA have been delegated by USEPA to the SWRCB and its nine RWQCBs. Under Section 402 of the CWA as delegated to the State of California, a discharge of pollutants to navigable waters is prohibited unless the discharge complies with an NPDES permit. The SWRCB and RWQCBs have developed numeric and narrative water quality criteria to protect beneficial uses of State waters and waterways.

*5.7.2.1.1.2 National Earthquake Hazards Reduction Act of 1977*

The National Earthquake Hazards Reduction Act of 1977 (Public Law 95-124) created the National Earthquake Hazards Reduction Program (NEHRP), establishing a long-term earthquake risk reduction program to better understand, predict, and mitigate risks associated with seismic events. Four federal agencies are responsible for coordinating activities under NEHRP: U.S. Geological Survey (USGS); National Science Foundation (NSF); Federal Emergency Management Agency (FEMA); and National Institute of Standards and Technology (NIST). Since its inception, NEHRP has shifted its focus from earthquake prediction to hazard reduction. The current program objectives (NEHRP 2009) are as follows:

1. Developing effective measures to reduce earthquake hazards;

2. Promoting the adoption of earthquake hazard reduction activities by federal, state, and local governments, national building standards and model building code organizations, engineers, architects, building owners, and others who play a role in planning and constructing buildings, bridges, structures, and critical infrastructure or "lifelines";

3. Improving the basic understanding of earthquakes and their effects on people and infrastructure through interdisciplinary research involving engineering, natural sciences, and social, economic, and decision sciences; and

4. Developing and maintaining the USGS seismic monitoring system (Advanced National Seismic System); the NSF-funded project aimed at improving materials, designs, and construction techniques (George E. Brown Jr. Network for Earthquake Engineering Simulation); and the global earthquake monitoring network (Global Seismic Network).

Implementation of NEHRP objectives is accomplished primarily through original research, publications, and recommendations and guidelines for state, regional, and local agencies in the development of plans and policies to promote safety and emergency planning.

#### 5.7.2.1.2 Federal, Paleontological Resources

##### *5.7.2.1.2.1 CFR Title 43*

Under Title 43, CFR Section 8365.1–5, the collection of scientific and paleontological resources, including vertebrate fossils, on federal land is prohibited. The collection of a "reasonable amount" of common invertebrate or plant fossils for noncommercial purposes is permissible (43 CFR 8365.1–5 [U.S. Government Printing Office 2014]).

##### *5.7.2.1.2.2 Federal Land Policy and Management Act (FLPMA)*

This law (Public Law [PL] 94-579; 90 Statute 2743, USC 1701–1782) requires that public lands be managed in a manner that will protect the quality of their scientific values. Specifically, FLPMA was established as a public land policy to "provide for the management, protection, development, and enhancement of the public lands." FLPMA requires federal agencies to manage public lands so that environmental, historic, archeological, and scientific resources are preserved and protected, where appropriate. Though FLPMA does not refer specifically to fossils, the law does protect scientific resources such as significant fossils, including vertebrate remains. FLPMA regulates the "use and development of public lands and resources through easements, licenses, and permits." The law requires the public lands to be inventoried so that the data can be used to make informed land-use decisions, and requires permits for the use, occupancy and development of the certain public lands, including the collection of significant fossils for scientific purposes (43 USC 1701 Section 102, 302 [U.S. Department of the Interior et al. 2001]).

##### *5.7.2.1.2.3 National Environmental Policy Act*

The National Environmental Protection Act (NEPA) requires the federal government to carry out its plans and programs in such a way as to "preserve important historic, cultural, and natural aspects of our national heritage" (42 USC Section 4331[b][4]). The intent of the statute is to require that agencies obtain sufficient information regarding historic and cultural properties (including consulting, for example, appropriate members of the public; local, state, and other federal government agencies; and Native American tribes, organizations, and individuals) to make a determination of the historical and cultural significance of affected historic or cultural properties (including paleontological resources) and to take into account whether irreversible adverse impacts to such resources can or should be avoided, minimized, or mitigated.

##### *5.7.2.1.2.4 Omnibus Public Lands Act*

The Omnibus Public Lands Act (OPLA) directs the Secretaries of Interior and Agriculture to manage and protect paleontological resources on federal land using "scientific principles and expertise." OPLA incorporates most of the recommendations of the report of the Secretary of the Interior titled "Assessment of Fossil Management on Federal and Indian Lands" (2000) to formulate a consistent paleontological resources management framework. In passing the OPLA, Congress officially recognized the scientific importance of paleontological resources on some federal lands by declaring that fossils from these lands are federal property that must be preserved and protected. Title VI, Subtitle D on Paleontological Resources Preservation (OPLA-PRP) codifies existing policies of federal agencies and provides the following:

- Uniform criminal and civil penalties for illegal sale and transport, and theft and vandalism of fossils from federal lands;

- Uniform minimum requirements for paleontological resource-use permit issuance (terms, conditions, and qualifications of applicants);
- Uniform definitions for "paleontological resources" and "casual collecting"; and
- Uniform requirements for curation of federal fossils in approved repositories.

Federal legislative protections for scientifically significant fossils applies to projects that take place on federal lands (with certain exceptions such as the Department of Defense), involve federal funding, require a federal permit, or involve crossing state lines. Since a portion of the GKR Project area occurs on federal agency-managed lands, federal protections for paleontological resources for those areas apply under NEPA, FLPMA, and OPLA-PRP. All paleontological work on federal agency lands must be approved and coordinated by the federal agency. All fossils collected from federal agency lands must be housed in a federally approved paleontological repository. The paleontological repository would be determined following lead agency coordination and the issuance of applicable permits for the GKR Project.

#### 5.7.2.1.3 State, Geology and Soils

##### *5.7.2.1.3.1 Alquist-Priolo Earthquake Fault Zoning Act*

The Alquist-Priolo (AP) Earthquake Fault Zoning Act was enacted by the State of California in 1972 to mitigate the hazard of surface faulting to structures planned for human occupancy and other critical structures. The State has established regulatory zones, known as Earthquake Fault Zones and often referred to as AP zones, around the surface traces of active faults and has issued Earthquake Fault Zone Maps to be used by government agencies in planning and reviewing new construction. In addition to residential projects, structures planned for human occupancy that are associated with industrial and commercial projects are of concern.

##### *5.7.2.1.3.2 California Public Utilities Commission General Order 95*

CPUC GO 95 Rules for Overhead Line Construction provides general standards for the design and construction of overhead electric transmission lines.

##### *5.7.2.1.3.3 California Public Utilities Commission General Order 128*

GO 128 (Rules for Construction of Underground Electric Supply and Communication Systems) provides general standards for the construction of underground electric systems.

##### *5.7.2.1.3.4 California Public Utilities Commission General Order 131-D*

Pursuant to GO 131-D, the CPUC has sole and exclusive jurisdiction over the siting and design of electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities in the State of California. Under CEQA, the CPUC is the lead agency with respect to such GKR Project elements within the State of California. SCE is required to comply with GO 131-D and is seeking a PTC from the CPUC for the GKR Project and therefore compliance with CEQA and other state environmental statutes involving cultural (including paleontological) resources. The CPUC is tasked with compliance of all provisions in CEQA and the CEQA Guidelines that concern cultural (including paleontological) resources as explained below.

##### *5.7.2.1.3.5 California Environmental Quality Act*

This law encourages the protection of all aspects of the environment by requiring state and local agencies to prepare multidisciplinary analyses of the environmental impacts of a proposed project, and to make decisions based on the findings of those analyses. CEQA also takes into account the laws and procedures of local California jurisdictions. CEQA includes in its definition of historical resources, "any object [or] site…that has yielded or may be likely to yield information important in prehistory" (14 CCR 15064.5[3]), which is typically interpreted as including fossil materials and other paleontological resources. More specifically, destruction of a "unique paleontological resource or site or unique geologic feature constitutes a significant impact under CEQA" (State CEQA Guidelines Appendix G). CEQA does not provide an explicit definition of a "unique paleontological resource," but a definition is implied by comparable language within the act relating to archaeological resources: "The procedures, types of activities, persons, and public agencies required to comply with CEQA are defined in: Guidelines for the Implementation of CEQA, as amended March 29, 1999" (Title 14, Chapter 3, CCR 15000 et seq.; Association of Environmental Professionals 2012). Treatment of paleontological resources under CEQA is generally similar to treatment of cultural resources, requiring evaluation of resources in the project; assessment of potential impacts on significant or unique resources; and development of mitigation measures for potentially significant impacts, which may include avoidance, monitoring, or data recovery excavation.

##### *5.7.2.1.3.6 Seismic Hazards Mapping Act*

The Seismic Hazards Mapping Act of 1990 (California Public Resources Code, Chapter 7.8, Section 2690-2699.6) directs the California Department of Conservation (DOC) to identify and map areas prone to liquefaction, earthquake-induced landslides, and amplified ground shaking. The purpose of this program is to minimize loss of life and property through the identification, evaluation, and mitigation of seismic hazards. Seismic Hazard Zone Maps that identify Zones of Required Investigation have been generated as a result of the program. Cities and counties are then required to use the Seismic Hazard Zone Maps in their land use planning and building permit processes. As discussed previously, the GKR Project is in an area that has not yet been mapped as part of the Seismic Hazards Mapping Act.

#### 5.7.2.1.4 State, Paleontological Resources

##### *5.7.2.1.4.1 Public Resources Code Section 5097.5*

This law affirms that no person shall willingly or knowingly excavate, remove, or otherwise destroy a vertebrate paleontological site or paleontological feature without the express permission of the overseeing public land agency. It further states under PRC 30244 that any development that would adversely affect paleontological resources shall require reasonable mitigation. These regulations apply to projects located on land owned by or under the jurisdiction of the state or any city, county, district, or other public agency (PRC Section 5097.5; California OHP 2005).

#### 5.7.2.1.5 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the GKR Project. Pursuant to GO 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the GKR Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

##### *5.7.2.1.5.1 Kern County General Plan*

The Kern County General Plan has provisions that state that areas within the AP SSZ and other recently active faults shall be designated with Map Code 2.1 – Seismic Hazard and areas of downslope ground movement shall be designated with Map Code 2.2 – Landslide (Kern County 2009). The Kern County

General Plan outlines policies that aim to reduce to potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.

*5.7.2.1.5.2 Kern County General Plan, Land Use, Open Space, and Conservation Element*

Section 1.3, Physical and Environmental Constraints, of the Land Use, Open Space, and Conservation Element notes that natural hazards are a long-term constraint that may affect developed uses of land. The Section contains Goals, Policies, and Implementation Measures to mitigate the risks presented by physical and environmental constraints. These Goals, Policies, and Implementation measures are generally applicable to new developments and are designed to reduce to potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion. The Element establishes Land Use Designations for areas with natural hazards, including seismic hazards, landslides, shallow groundwater, steep slopes, and flood hazards.

Paleontological resources are briefly mentioned in the Land Use, Open Space and Conservation element of the Kern County General Plan in Section 1.10.3, Archaeological, Paleontological, Cultural, and Historical Preservation. Policy 25 states that the County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors. Implementation Measure M is the only measure which directly or indirectly addresses paleontological resources, and it states that in areas of known paleontological resources, the County should address the preservation of these resources where feasible (Kern County 2009).

*5.7.2.1.5.3 Kern County General Plan, Safety Element*

Per Section 65302(g) of the California Government Code, the Safety Element includes Policies and Implementation Measures designed to protect the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence, liquefaction and other seismic hazards; flooding; and wildland and urban fires.

*5.7.2.1.5.4 Los Angeles County General Plan*

The Conservation and Natural Resources Element of the County of Los Angeles General Plan recognizes paleontological resources as non-renewable and irreplaceable resources that are an important part of the County's identity (County of Los Angeles 2015). The general plan includes four policies to protect paleontological resources (Goal C/NR 14):

- Policy C/NR 14.1: Mitigate all impacts from new development on or adjacent to historic, cultural, and paleontological resources to the greatest extent feasible;
- Policy C/NR 14.2: Support an inter-jurisdictional collaborative system that protects and enhances historic, cultural, and paleontological resources;
- Policy C/NR 14.5: Promote public awareness of historic, cultural, and paleontological resources; and
- Policy C/NR 14.6: Ensure proper notification and recovery processes are carried out for development on or near historic, cultural, and paleontological resources.

## 5.7.3 Impact Questions

### *5.7.3.1 Impact Questions*

The significance criteria for assessing the impacts to geology and soils come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, or injury, or death involving: rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (Refer to Division of Mines and Geology Special Publication 42.); strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landslides
- Result in substantial soil erosion or the loss of topsoil
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

### *5.7.3.2 Additional CEQA Impact Questions*

There are no CPUC-identified additional CEQA impact questions.

## 5.7.4 Impact Analysis

### *5.7.4.1 Impact Analysis*

#### 5.7.4.1.1 Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, or injury, or death involving: rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (Refer to Division of Mines and Geology Special Publication 42.); strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landslides?

##### *5.7.4.1.1.1 Construction*

**Less than Significant Impact.** The replacement components included in the GKR Project will have the potential to be directly impacted by surface rupture in the Alquist-Priolo Special Studies Zones crossed by the alignment. Portions of the GKR Project will be constructed within these zones, and as a result could experience strong seismic ground shaking. Even though the GKR Project alignment is located in areas susceptible to earthquake forces, the subtransmission infrastructure involved will not be used for human occupancy and will be designed consistent with GO 95, Rules for Overhead Line Construction, to withstand wind, temperature, and wire tension loads. Accounting for these factors will result in a design that will be adequate to withstand expected seismic loading, and therefore impacts due to strong seismic ground shaking will be less than significant.

The GKR Project alignment may pass through areas of localized liquefaction hazard in parts of the Kern River Canyon; Castac and Cummings valleys; and near creek crossings. Horsethief Flat in Segment 4 was identified as a small area of potential liquefaction risk by Kern County. Settlements induced by dynamic (earthquake) forces are anticipated to be uniform for the proposed replacement monopole and H-frame structures given their small footprints, and thus use of these structures reduces the potential for differential settlements and other adverse effects including loss of functionality, or risk of injury or loss of life. Therefore, impacts associated with liquefaction will be less than significant in areas potentially subject to liquefaction.

Those portions of the GKR Project alignment that pass through valley areas have relatively low to absent potential of landslides or other slope-related hazards. In localized areas with higher potential of landslides or other slope-related hazards, structures will be exposed to the risk of loss from a landslide or rockfall. These areas are generally uninhabited and non-SCE structures are generally not present proximate to the location of existing or replacement subtransmission poles. Therefore, reconstruction of the existing subtransmission lines in these areas will not expose people or non-SCE structures to potential substantial adverse effects, including the risk of loss, injury, or death, and thus impacts due to landslides will be less than significant.

##### *5.7.4.1.1.2 Operation*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that will be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts will be realized under this criterion during operations and maintenance.

#### 5.7.4.1.2 Would the project result in substantial soil erosion or the loss of topsoil?

##### *5.7.4.1.2.1 Construction*

**Less than Significant Impact.** Loss of topsoil and erosion could result from construction activities, including the operation of heavy machinery on unimproved roadways, grading activities, excavation, drilling, or wind or water erosion of stockpiled fill/excavated materials. Preparation of the staging areas may result in the loss of topsoil; however, the application of road base or crushed rock will serve to reduce erosivity. Use of existing access roads will also result in the loss of topsoil; however, compaction associated with that use will serve to minimize erosion on roadways.

Erosion due to water runoff and wind will be minimized by the implementation of BMPs that will be described in the SWPPP prepared for the GKR Project. During construction, water trucks and other measures will be used to minimize the quantity of fugitive dust created by construction. Implementation of the SWPPP and site-specific BMPs will ensure that no substantial soil erosion or loss of topsoil results from construction of the GKR Project, and thus impacts will be less than significant.

##### *5.7.4.1.2.2 Operation*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that will be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts will be realized under this criterion during operations and maintenance.

#### 5.7.4.1.3 Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

##### *5.7.4.1.3.1 Construction*

**Less than Significant Impact.** The GKR Project would not cause any geologic unit or soil to become unstable.

The potential for risk from on- or off-site landslides is considered to be low for components of the GKR Project located in valley areas with relatively low threats of landslide or other slope-related hazards. Localized areas of steeper slopes and higher landslide hazard occur where GKR Project components are located along the edges of hills and mountains. Construction activities may trigger minor, isolated instances of on- or off-site sliding of surficial rocks or soil; however, these areas are generally unpopulated and third-party structures are generally not present. Further, the construction activities would not affect the geologic unit, and thus potential effects from on- or off-site landslide are less than significant.

Ground subsidence related to decreasing groundwater levels has been documented in the San Joaquin Valley. The construction of the GKR Project does not entail extensive dewatering and thus will not result in subsidence.

The GKR Project alignment may pass through areas of liquefaction hazard as described above. Liquefaction-induced lateral spreading may also be a hazard in these areas. Construction of the GKR Project will not in and of itself result in liquefaction of soils or lateral spreading, and therefore impacts will be less than significant.

No records of soil collapse were identified near the GKR Project alignment; however, soils subject to collapse due to water infiltration may be locally present. Construction of the GKR Project will not in and of itself result in the collapse of soils, and therefore impacts will be less than significant.

As presented above, impacts associated with the risk of landslides, lateral spreading, subsidence, liquefaction, and collapse will be less than significant.

##### *5.7.4.1.3.2 Operation*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that will be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts will be realized under this criterion during operations and maintenance.

#### 5.7.4.1.4 Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

##### *5.7.4.1.4.1 Construction*

**Less than Significant Impact.** Soils along the GKR Project alignment generally have a low to moderate shrink-swell potential, with the exception of a limited area of high potential in Segment 4. Kern County documentation indicates that expansive soils are generally not a hazard along the GKR Project alignment. There are no residences or third-party improvements near the components of the GKR Project that will be constructed in the area where a high potential for expansive soils is present. Therefore, less than significant impacts will be realized.

##### 5.7.4.1.4.2 Operation

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that will be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts will be realized under this criterion during operations and maintenance.

#### 5.7.4.1.5 Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

##### 5.7.4.1.5.1 Construction

**No Impact.** No septic tanks or alternative waste water disposal systems are included in the GKR Project. Therefore, no impacts will be realized.

##### 5.7.4.1.5.2 Operation

**No Impact.** No septic tanks or alternative waste water disposal systems are included in the GKR Project. Therefore, no impacts will be realized.

#### 5.7.4.1.6 Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

##### 5.7.4.1.6.1 Construction

**Less Than Significant Impact with Mitigation.** No previously recorded fossil localities occur within the GKR Project alignment, and the fossil localities that were observed during field surveys are non-significant. However, scientifically significant fossils have been found in Kern and Los Angeles counties from several of the same formations and from sediments of similar age, lithology, and depositional environment. Similar fossils may be encountered when excavating in geologic units with very high, high, moderate, or unknown paleontological potential (Potential Fossil Yield Classification [PFYC] 5, 4, 3, or U). Excavations in these geologic units may result in a adverse direct impact on paleontological resources. Excavations entirely within low potential (PFYC 2) geologic units are unlikely to uncover significant fossil vertebrate remains. However, the unnamed low potential Holocene younger deposits may shallowly overlie older, more sensitive sedimentary deposits that could be encountered in Project excavations. Excavation in areas of very low potential (PFYC 1) geologic units (e.g., igneous and metamorphic rocks) would not result in impacts to paleontological resources.

Direct adverse impacts on paleontological resources resulting from construction of the GKR Project would be reduced to a less-than-significant level with implementation of APMs PAL-1, PAL-2, and PAL-3. These measures include preparation of a Paleontological Resources Monitoring and Mitigation Plan (PRMMP), construction monitoring, and procedures to implement if paleontological resources are encountered during construction.

The GKR Project would not result in indirect impacts on paleontological resources during construction because it would not increase public access.

##### 5.7.4.1.6.2 Operation

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that will be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts will be realized under this criterion during operations and maintenance.

### *5.7.4.2 Geotechnical Requirements*

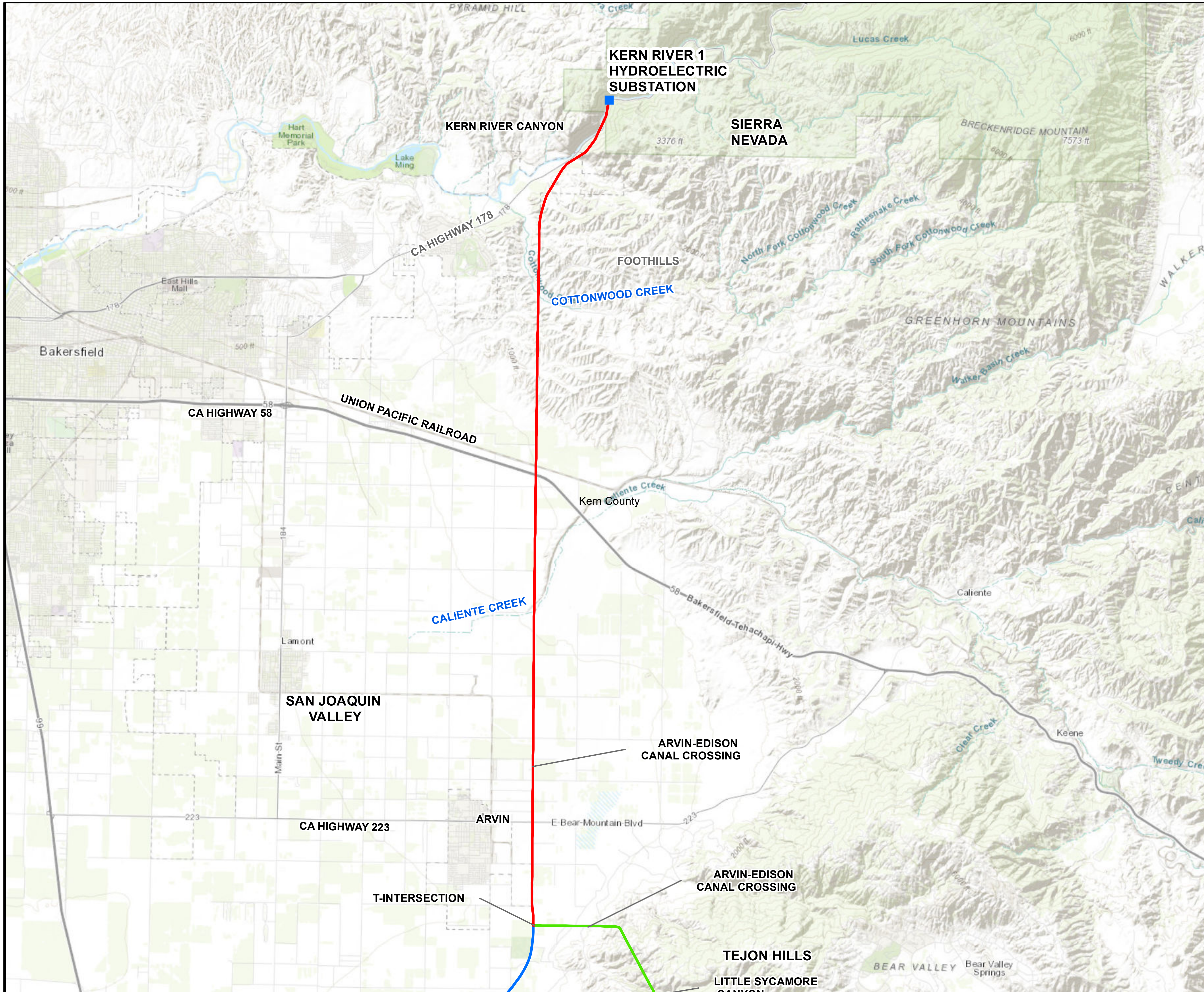
Based on the findings of the geotechnical analysis, SCE would design GKR Project components to minimize the potential for landslides, lateral spreading, subsidence, liquefaction, or collapse. Measures that may be used to minimize impacts could include, but are not limited to: construction of pile foundations, installation of support around pole bases, installation of flexible bus connections, and incorporation of slack in cables.

### *5.7.4.3 Paleontological Resources*

The field survey performed along the GKR Project alignment confirmed the presence of very high potential (PFYC 5) Miocene Round Mountain Silt, very high potential (PFYC 5) Kern River Formation, high potential (PFYC 4) Eocene Tejon Formation, high potential (PFYC 4) Miocene Bena Gravel, and unknown and moderate potential (PFYC U and 3) Pleistocene older alluvium. There is the potential for additional geologic units mapped in the GKR Project area and vicinity to be present subsurface. The survey also confirmed the presence of various very low and low sensitivity igneous and metamorphic units (PFYC 1) as well as Holocene younger deposits including alluvium, clay, gravel, and disturbed sediments (PFYC 2). Landslide deposits (PFYC U and 3) were not observed during the field survey, although the sedimentary and igneous units of which they are comprised were observed. Furthermore, if it is determined that the stratigraphy within the landslide deposits is intact and not jumbled, any fossils discovered would still have stratigraphic context and would thus be scientifically viable.

## 5.7.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for Geology, Soils, and Paleontological resources.




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

Legend

- SUBSTATION
- SEGMENT 1
- SEGMENT 2
- SEGMENT 4
- COUNTIES

0 2 4
Miles

IMAGERY SOURCE: ESRI ONLINE NATIONAL GEOGRAPHIC AND WORLD IMAGERY 2015

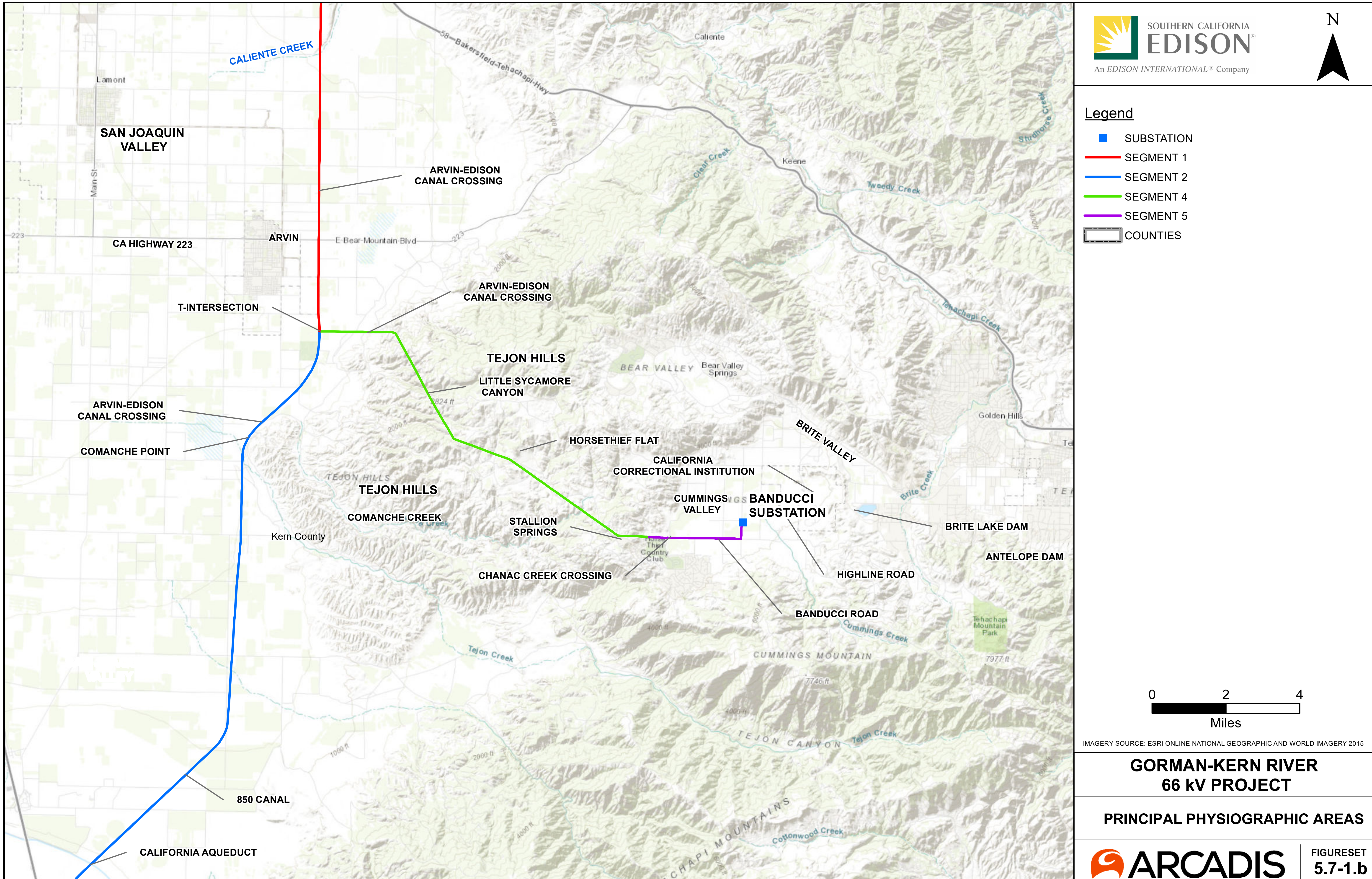
**GORMAN-KERN RIVER 66 kV PROJECT**

**PRINCIPAL PHYSIOGRAPHIC AREAS**

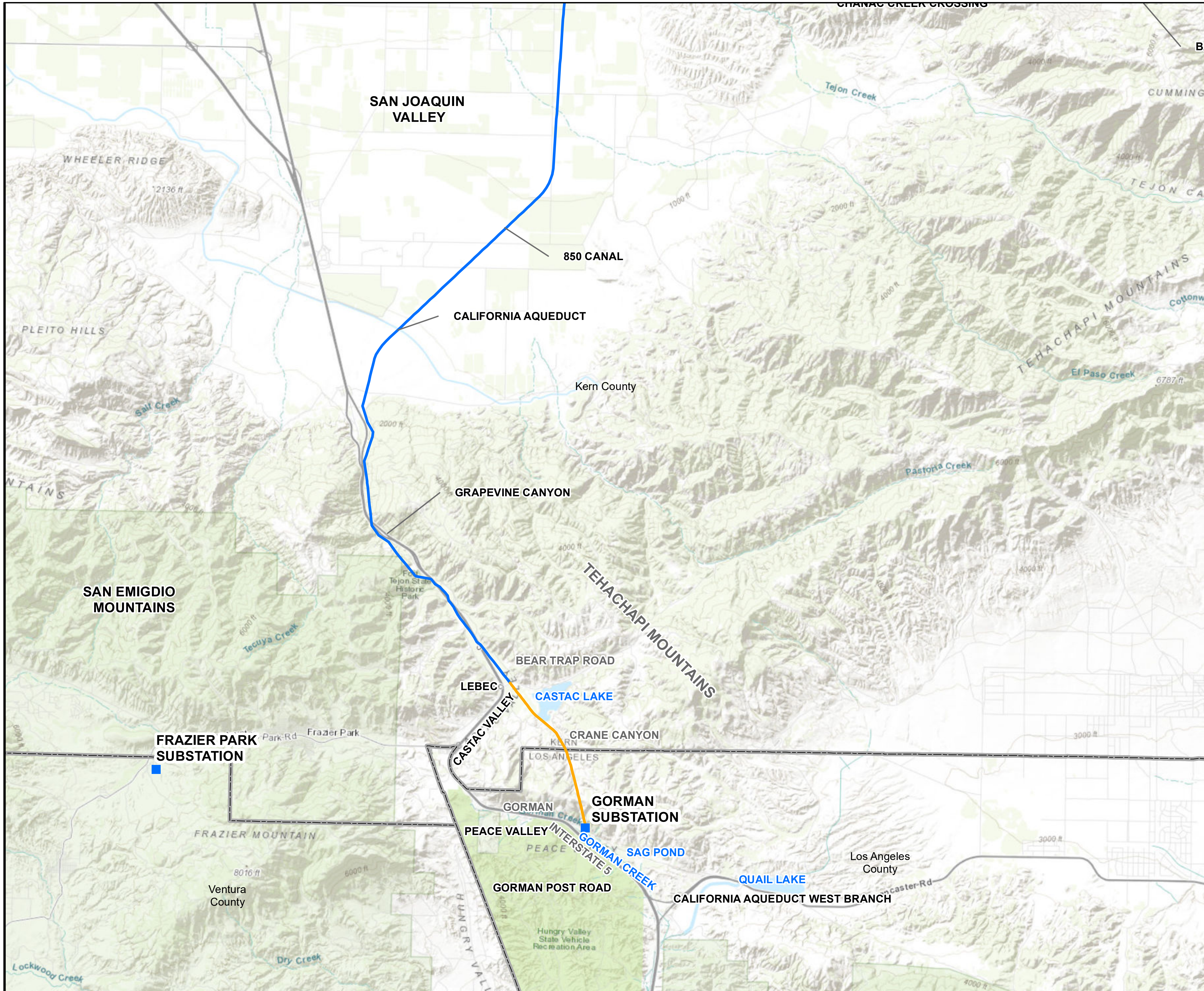
ARCADIS

FIGURESET 5.7-1.a

\\corparcgis\Data\ArcGis\Data\GIS\PROJECTS_ENV T_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-7-1_Principal Physiographic Areas.mxd 10/11/2021 mgi01044
Coordinate System: NAD 1983 UTM Zone 11N




\\corpargis\Data\ArcGis\Data\GIS\PROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-7-1_Principal Physiographic Areas.mxd 10/11/2021 mgi01044
Coordinate System: NAD 1983 UTM Zone 11N




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

N

Legend

- SUBSTATION
- SEGMENT 2
- SEGMENT 3
- COUNTIES

0 2 4

Miles

IMAGERY SOURCE: ESRI ONLINE NATIONAL GEOGRAPHIC AND WORLD IMAGERY 2015

**GORMAN-KERN RIVER 66 kV PROJECT**

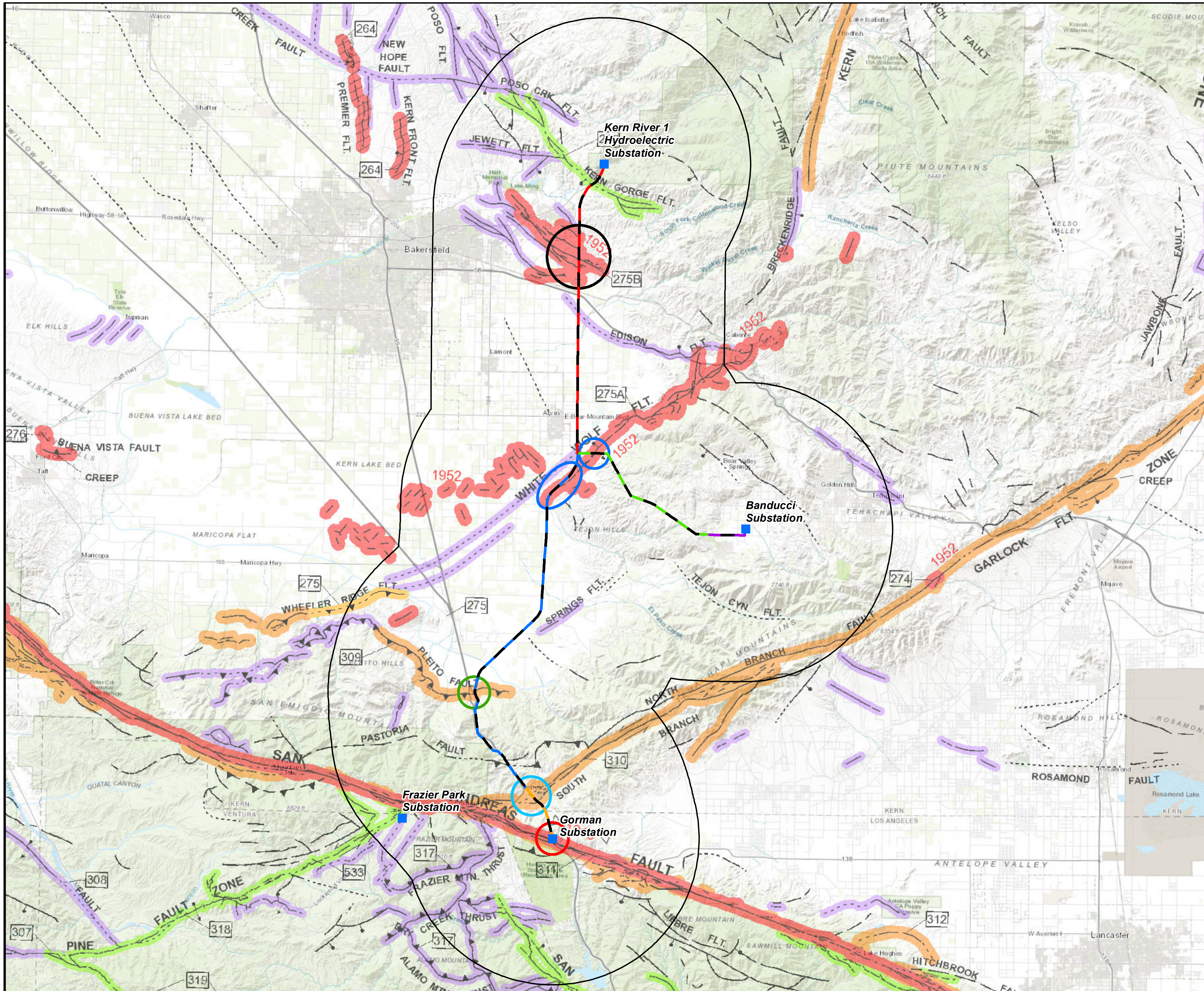
**PRINCIPAL PHYSIOGRAPHIC AREAS**

ARCADIS

FIGURESET **5.7-1.c**

\\corparcgis\Data\ArcGis\Data\GIS\PROJECTS_ENV T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-7-1_Principal Physiographic Areas.mxd 10/11/2021 mgi01044

Coordinate System: NAD 1983 UTM Zone 11N




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

Legend

- SUBSTATION
- SEGMENT 1
- SEGMENT 2
- SEGMENT 3
- SEGMENT 4
- SEGMENT 5
- 10-MILE PROJECT BUFFER

FAULT

- HISTORICAL FAULT
- HOLOCENE FAULT
- LATE QUATERNARY FAULT
- QUATERNARY FAULT
- PRE-QUATERNARY FAULT

HOLOCENE/HISTORICAL FAULT ZONES

- UNNAMED GROUND BREAKS OF 1952 EARTHQUAKE
- WHITE WOLF FAULT
- PLEITO FAULT
- GARLOCK FAULT
- SAN ANDREAS FAULT

Source: CGS 2017b

Note: Boxed numbers indicate references in CGS (2010).

0 6 12
Miles

IMAGERY SOURCE: ESRI ONLINE NATIONAL GEOGRAPHIC AND WORLD IMAGERY 2015

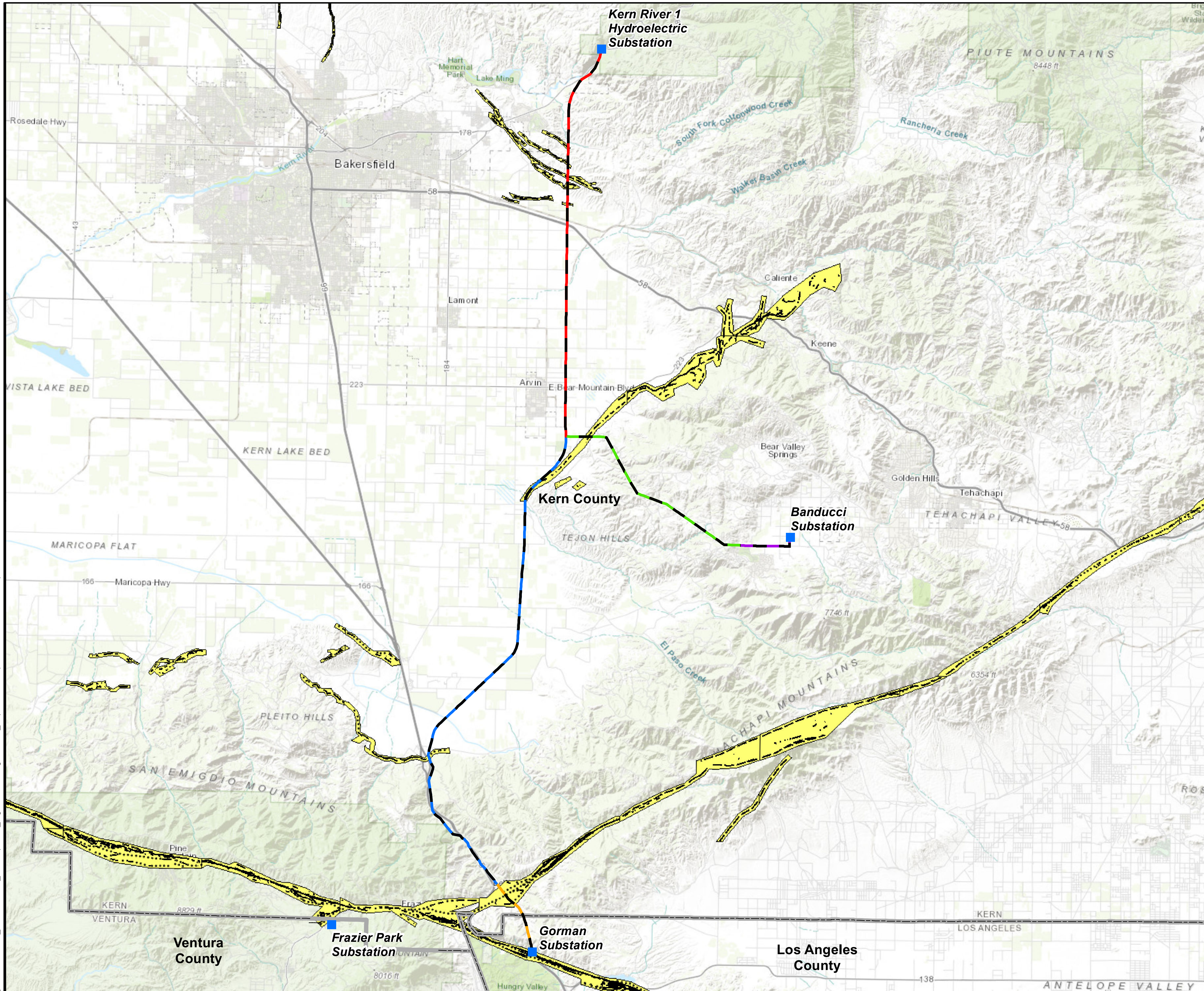
**GORMAN-KERN RIVER 66 kV PROJECT**

**FAULT MAP**

ARCADIS

FIGURE 5.7-2

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-7-2_Fault Map.mxd 10/11/2021 3:44:38 PM




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

N

Legend

- SUBSTATION
- SEGMENT 1
- SEGMENT 2
- SEGMENT 3
- SEGMENT 4
- SEGMENT 5
- HOLOCENE FAULT
- ALQUIST-PRIOLO ZONES
- COUNTIES

Source: CGS, 2017a

0 4 8

Miles

IMAGERY SOURCE: ESRI ONLINE NATIONAL GEOGRAPHIC AND WORLD IMAGERY 2015

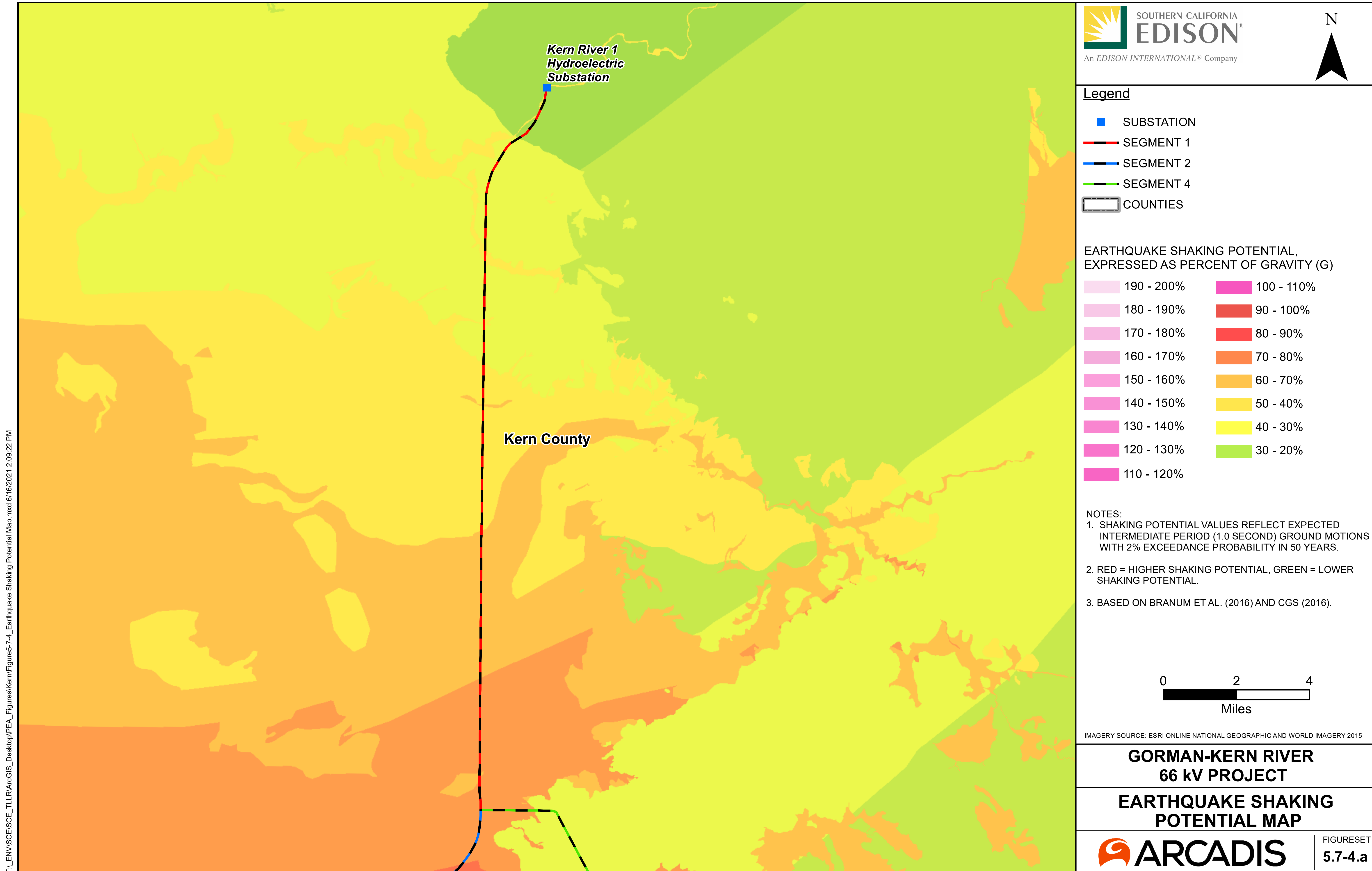
GORMAN-KERN RIVER 66 kV PROJECT

ALQUIST-PRIOLO SPECIAL STUDIES ZONES MAP

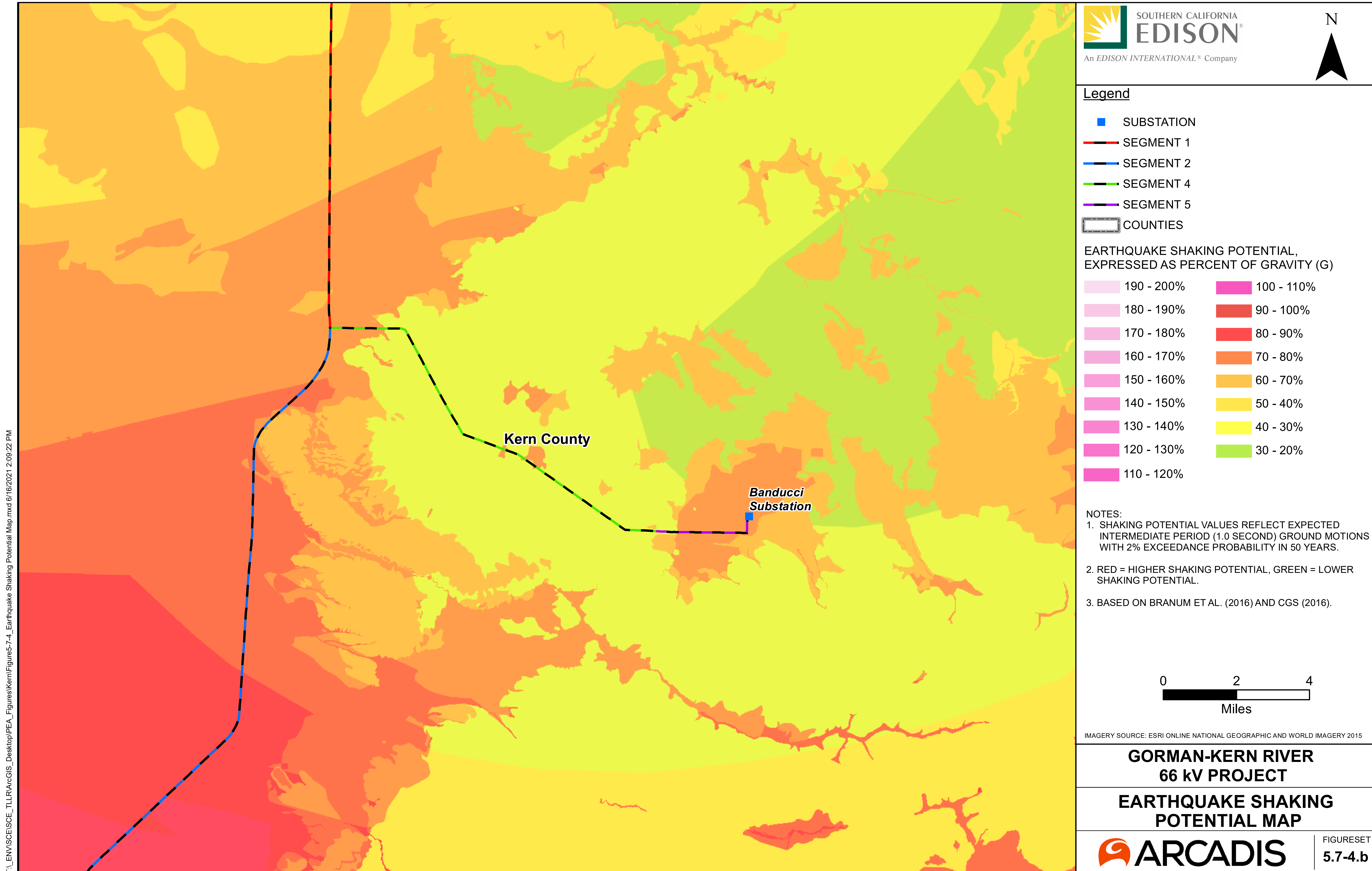
ARCADIS

FIGURE 5.7-3

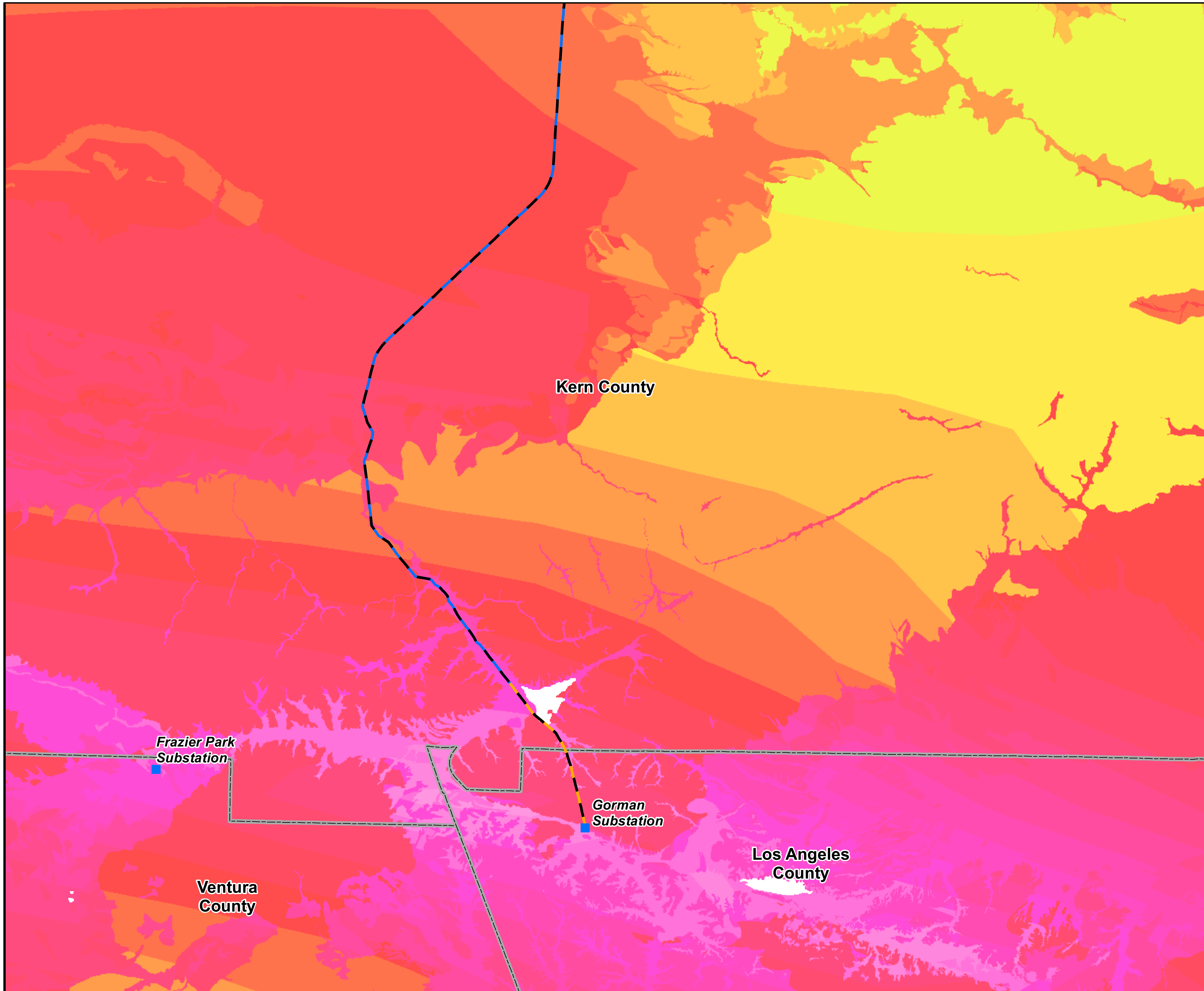
T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-7-3_Alquist-Priolo Special Studies Zones Map.mxd 6/15/2021 6:53:30 PM



Kern River 1 Hydroelectric Substation
Kern County
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company
N
Legend
SUBSTATION
SEGMENT 1
SEGMENT 2
SEGMENT 4
COUNTIES
EARTHQUAKE SHAKING POTENTIAL, EXPRESSED AS PERCENT OF GRAVITY (G)
190 - 200%
180 - 190%
170 - 180%
160 - 170%
150 - 160%
140 - 150%
130 - 140%
120 - 130%
110 - 120%
100 - 110%
90 - 100%
80 - 90%
70 - 80%
60 - 70%
50 - 40%
40 - 30%
30 - 20%
NOTES:
1. SHAKING POTENTIAL VALUES REFLECT EXPECTED INTERMEDIATE PERIOD (1.0 SECOND) GROUND MOTIONS WITH 2% EXCEEDANCE PROBABILITY IN 50 YEARS.
2. RED = HIGHER SHAKING POTENTIAL, GREEN = LOWER SHAKING POTENTIAL.
3. BASED ON BRANUM ET AL. (2016) AND CGS (2016).
0 2 4
Miles
IMAGERY SOURCE: ESRI ONLINE NATIONAL GEOGRAPHIC AND WORLD IMAGERY 2015
GORMAN-KERN RIVER 66 kV PROJECT
EARTHQUAKE SHAKING POTENTIAL MAP
ARCADIS
FIGURESET 5.7-4.a
T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-7-4_Earthquake Shaking Potential Map.mxd 6/16/2021 2:09:22 PM



Kern County
Banducci Substation
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company
N
Legend
SUBSTATION
SEGMENT 1
SEGMENT 2
SEGMENT 4
SEGMENT 5
COUNTIES
EARTHQUAKE SHAKING POTENTIAL, EXPRESSED AS PERCENT OF GRAVITY (G)
190 - 200%
180 - 190%
170 - 180%
160 - 170%
150 - 160%
140 - 150%
130 - 140%
120 - 130%
110 - 120%
100 - 110%
90 - 100%
80 - 90%
70 - 80%
60 - 70%
50 - 40%
40 - 30%
30 - 20%
NOTES:
1. SHAKING POTENTIAL VALUES REFLECT EXPECTED INTERMEDIATE PERIOD (1.0 SECOND) GROUND MOTIONS WITH 2% EXCEEDANCE PROBABILITY IN 50 YEARS.
2. RED = HIGHER SHAKING POTENTIAL, GREEN = LOWER SHAKING POTENTIAL.
3. BASED ON BRANUM ET AL. (2016) AND CGS (2016).
0
2
4
Miles
IMAGERY SOURCE: ESRI ONLINE NATIONAL GEOGRAPHIC AND WORLD IMAGERY 2015
GORMAN-KERN RIVER 66 kV PROJECT
EARTHQUAKE SHAKING POTENTIAL MAP
ARCADIS
FIGURESET
5.7-4.b
T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-7-4_Earthquake Shaking Potential Map.mxd 6/16/2021 2:09:22 PM




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

Legend

SUBSTATION
SEGMENT 2
SEGMENT 3
COUNTIES

EARTHQUAKE SHAKING POTENTIAL, EXPRESSED AS PERCENT OF GRAVITY (G)

190 - 200%
180 - 190%
170 - 180%
160 - 170%
150 - 160%
140 - 150%
130 - 140%
120 - 130%
110 - 120%
100 - 110%
90 - 100%
80 - 90%
70 - 80%
60 - 70%
50 - 40%
40 - 30%
30 - 20%

NOTES:
1. SHAKING POTENTIAL VALUES REFLECT EXPECTED INTERMEDIATE PERIOD (1.0 SECOND) GROUND MOTIONS WITH 2% EXCEEDANCE PROBABILITY IN 50 YEARS.
2. RED = HIGHER SHAKING POTENTIAL, GREEN = LOWER SHAKING POTENTIAL.
3. BASED ON BRANUM ET AL. (2016) AND CGS (2016).

0 2 4
Miles

IMAGERY SOURCE: ESRI ONLINE NATIONAL GEOGRAPHIC AND WORLD IMAGERY 2015

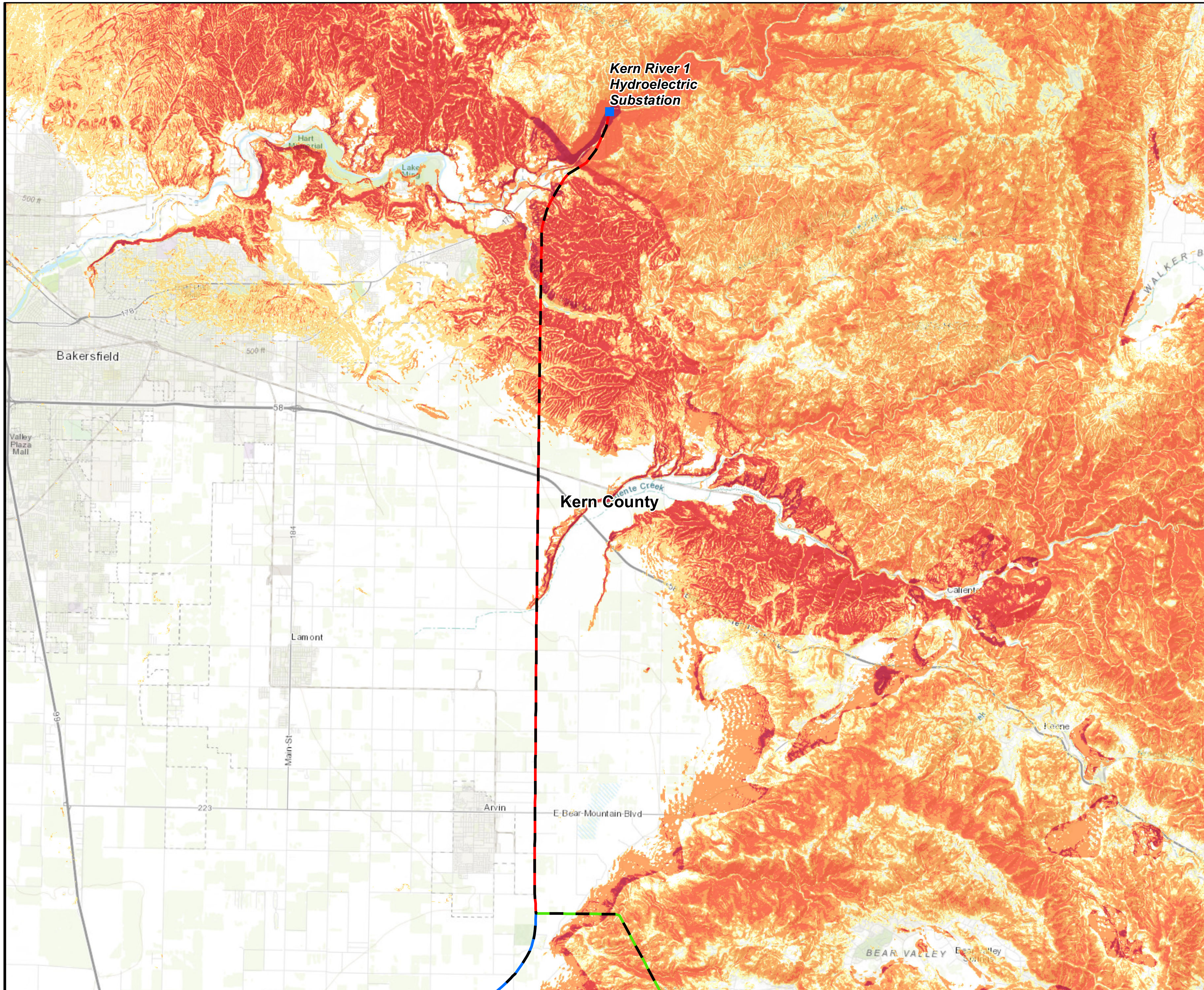
**GORMAN-KERN RIVER 66 kV PROJECT**

**EARTHQUAKE SHAKING POTENTIAL MAP**

ARCADIS

FIGURESET 5.7-4.c

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-7-4_Earthquake Shaking Potential Map.mxd 6/16/2021 2:09:22 PM




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

Legend

- SUBSTATION
- SEGMENT 1
- SEGMENT 2
- SEGMENT 4
- COUNTIES
- GREATER LANDSLIDE SUSCEPTIBILITY
- LOWER LANDSLIDE SUSCEPTIBILITY

NOTES:
1. LANDSLIDE SUSCEPTIBILITY REFLECTS ROCK STRENGTH AND SLOPE CLASS.
2. BASED ON WILLS ET AL. (2011) AND CGS (2018C)

0 2 4
Miles

IMAGERY SOURCE: ESRI ONLINE NATIONAL GEOGRAPHIC AND WORLD IMAGERY 2015

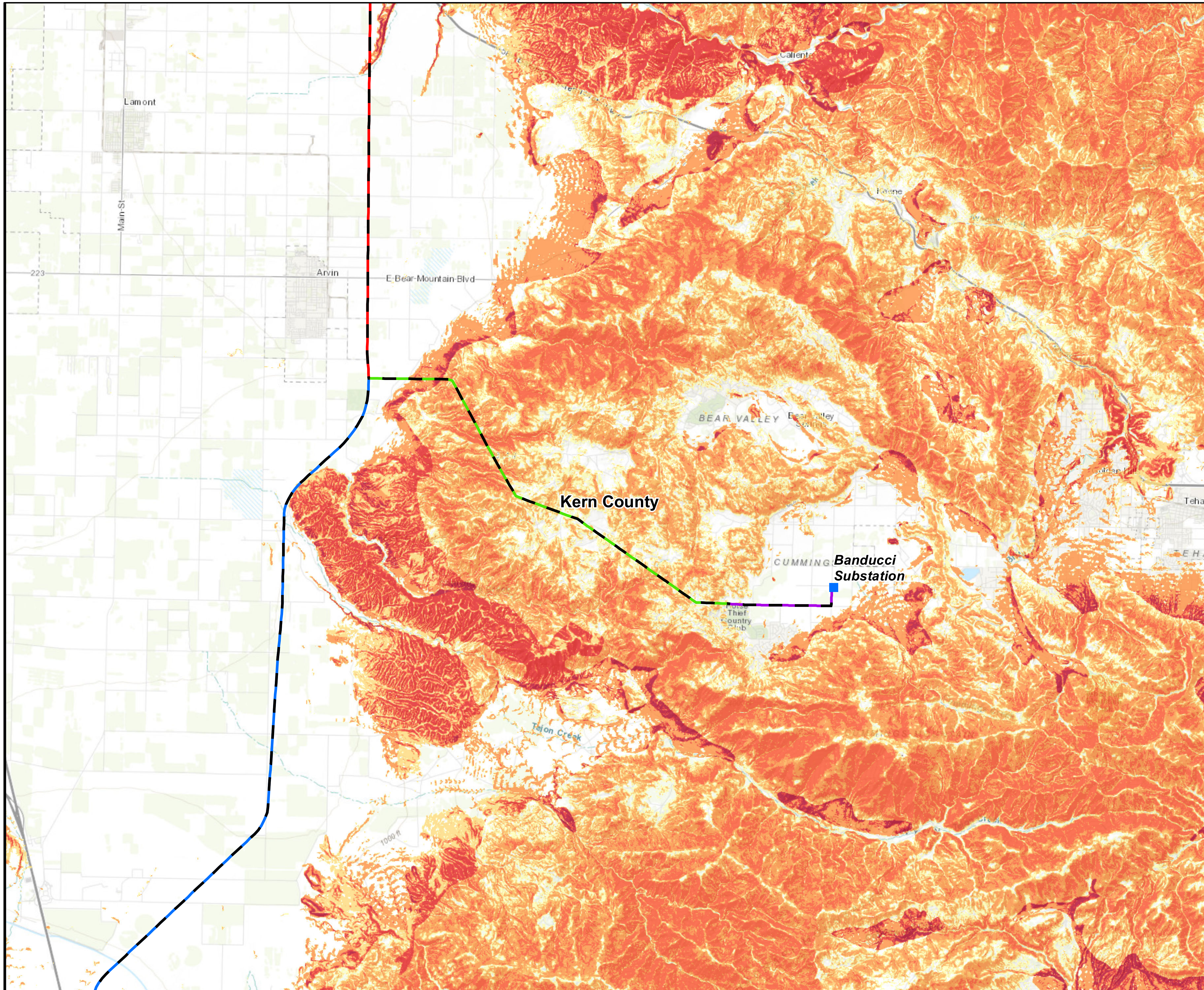
# GORMAN-KERN RIVER 66 kV PROJECT

## LANDSLIDE SUSCEPTIBILITY MAP

ARCADIS

FIGURESET
5.7-5.a

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-7-5_Landslide Susceptibility Map.mxd 6/16/2021 2:09:32 PM




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

Legend

- SUBSTATION
- SEGMENT 1
- SEGMENT 2
- SEGMENT 4
- SEGMENT 5
- COUNTIES
- GREATER LANDSLIDE SUSCEPTIBILITY
- LOWER LANDSLIDE SUSCEPTIBILITY

NOTES:
1. LANDSLIDE SUSCEPTIBILITY REFLECTS ROCK STRENGTH AND SLOPE CLASS.
2. BASED ON WILLS ET AL. (2011) AND CGS (2018C)

0 2 4
Miles

IMAGERY SOURCE: ESRI ONLINE NATIONAL GEOGRAPHIC AND WORLD IMAGERY 2015

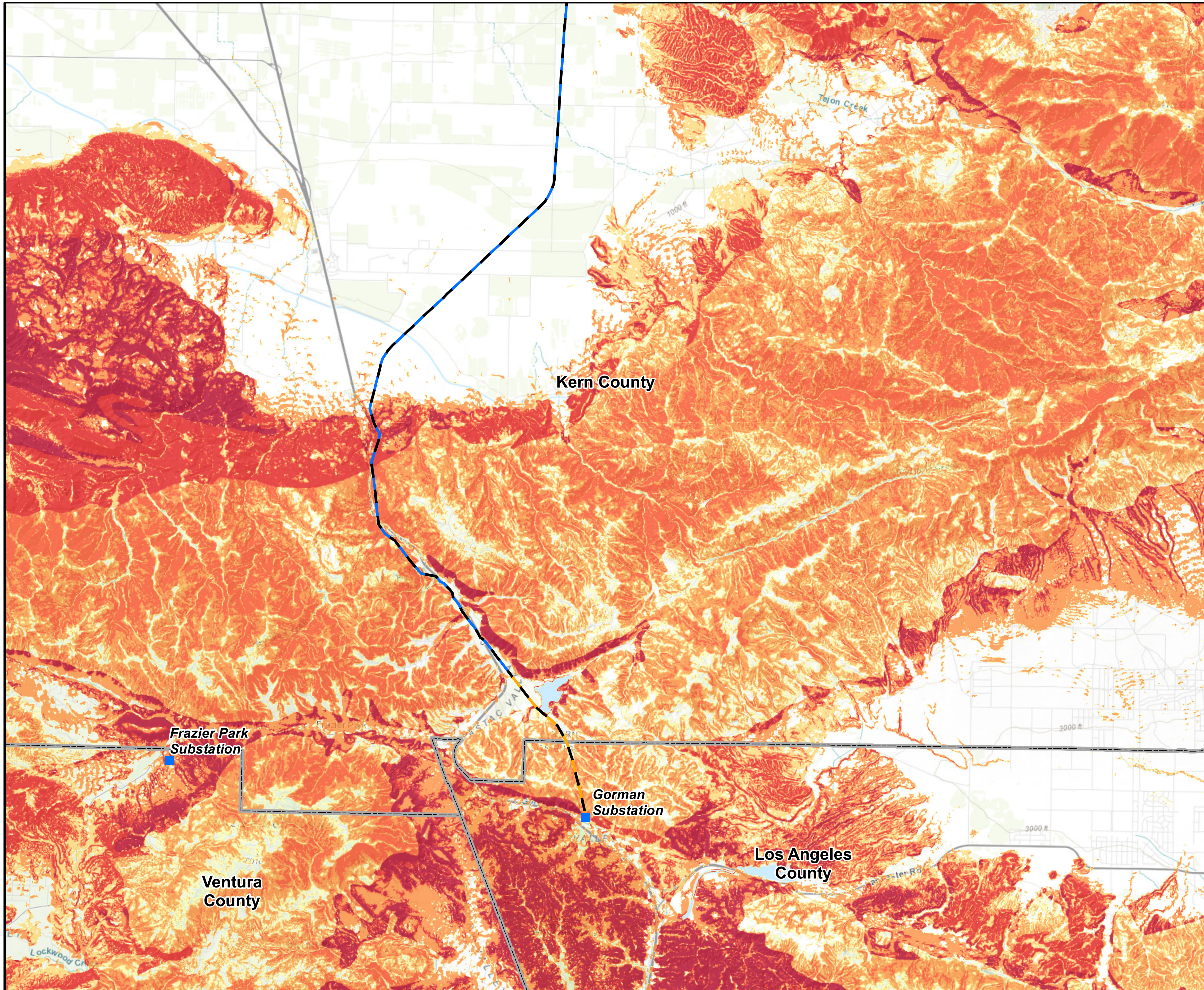
**GORMAN-KERN RIVER 66 kV PROJECT**

**LANDSLIDE SUSCEPTIBILITY MAP**

ARCADIS

FIGURESET 5.7-5.b

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-7-5_Landslide Susceptibility Map.mxd 6/16/2021 2:09:32 PM




SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company

N

Legend

- SUBSTATION
- SEGMENT 2
- SEGMENT 3
- COUNTIES
- GREATER LANDSLIDE SUSCEPTIBILITY
- LOWER LANDSLIDE SUSCEPTIBILITY

NOTES:
1. LANDSLIDE SUSCEPTIBILITY REFLECTS ROCK STRENGTH AND SLOPE CLASS.
2. BASED ON WILLS ET AL. (2011) AND CGS (2018C)

0 2 4
Miles

IMAGERY SOURCE: ESRI ONLINE NATIONAL GEOGRAPHIC AND WORLD IMAGERY 2015

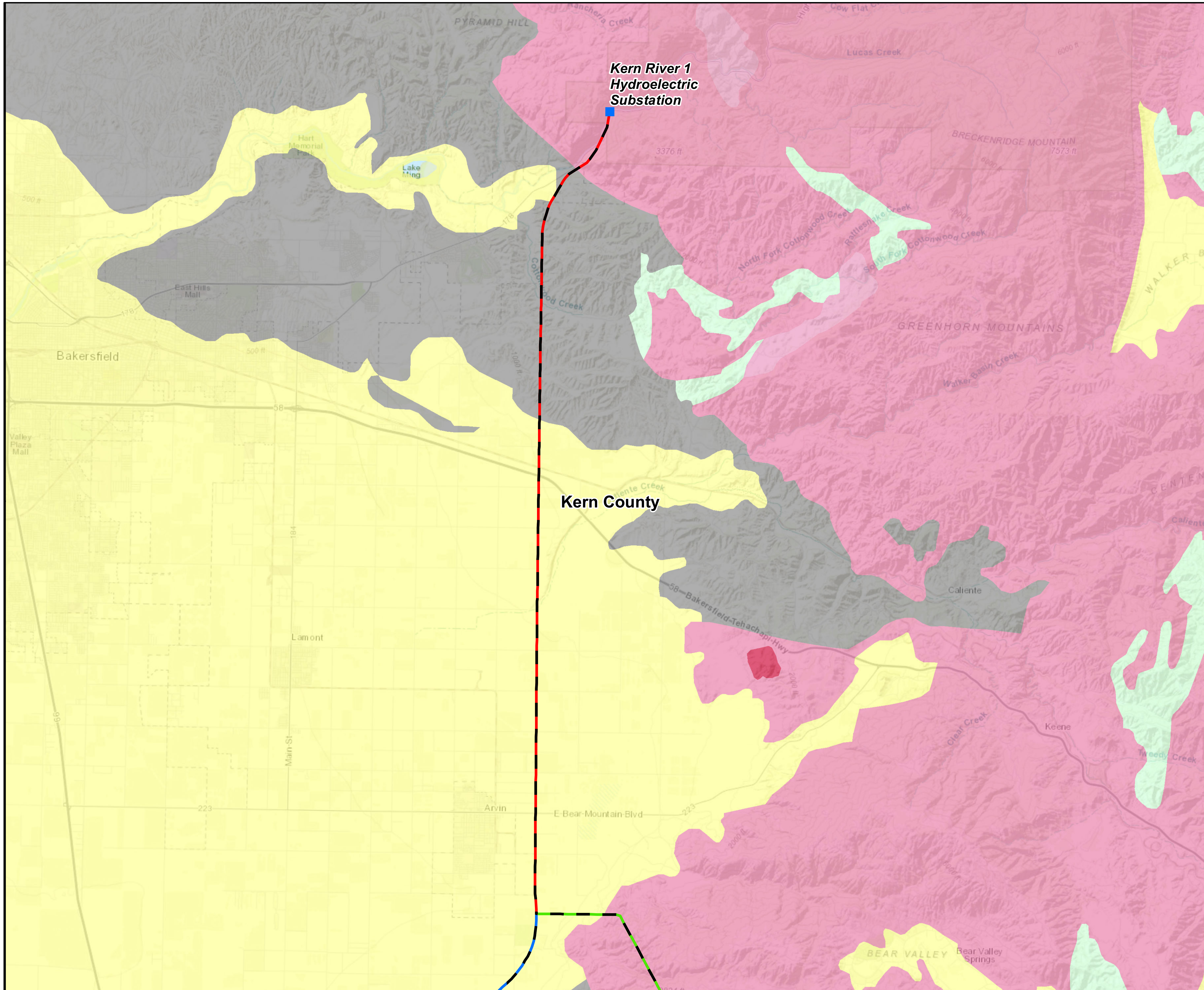
**GORMAN-KERN RIVER 66 kV PROJECT**

**LANDSLIDE SUSCEPTIBILITY MAP**

ARCADIS

FIGURESET
5.7-5.c

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-7-5_Landslide Susceptibility Map.mxd 6/16/2021 2:09:32 PM




N

## Legend

- SUBSTATION
- SEGMENT 1
- SEGMENT 2
- SEGMENT 4
- COUNTIES
- PLIOCENE TO HOLOCENE ALLUVIUM AND TERRACE DEPOSITS
- OLIGOCENE TO PLEISTOCENE SANDSTONE, MUDSTONE, AND CONGLOMERATE
- PRIMARILY MESOZOIC GRANODIORITE AND QUARTZ MONZONITE
- PROTEROZOIC TO CRETACEOUS SCHIST AND GNEISS

0 2 4
Miles

Source: USGS 2019a

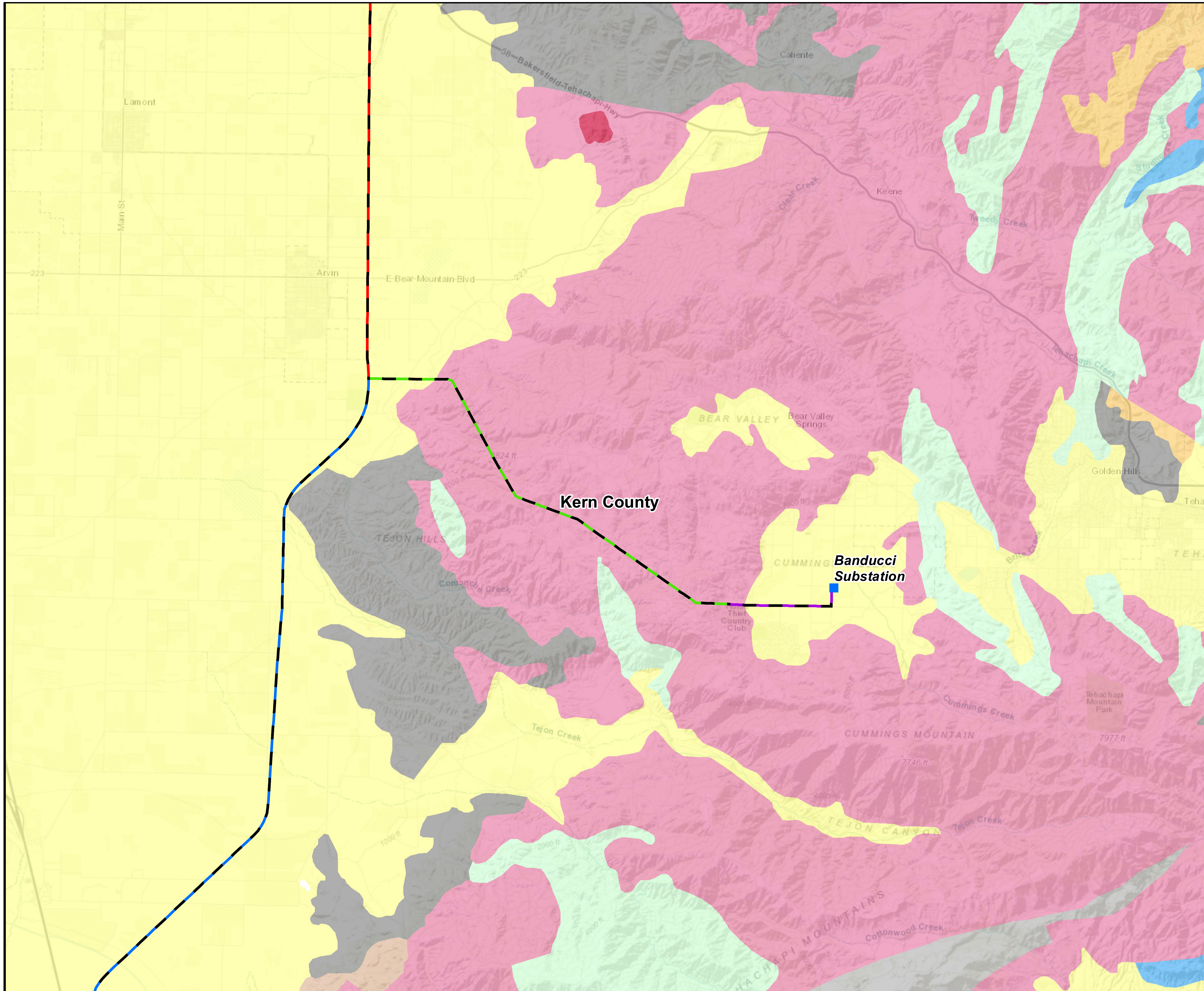
IMAGERY SOURCE: ESRI ONLINE NATIONAL GEOGRAPHIC AND WORLD IMAGERY 2015

**GORMAN-KERN RIVER 66 kV PROJECT**

**GENERALIZED GEOLOGIC MAP**

FIGURESET 5.7-6.a

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-7-6_Generalized Geologic Map.mxd 6/16/2021 2:13:17 PM




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

Legend

SUBSTATION
SEGMENT 1
SEGMENT 2
SEGMENT 4
SEGMENT 5
COUNTIES
PLIOCENE TO HOLOCENE ALLUVIUM AND TERRACE DEPOSITS
QUATERNARY BASALT AND TEPHRITE
TERTIARY RHYOLITE AND BASALT
OLIGOCENE TO PLEISTOCENE SANDSTONE, MUDSTONE, AND CONGLOMERATE
LATE CRETACEOUS TO EOCENE MICA SCHIST
PRIMARILY MESOZOIC GRANODIORITE AND QUARTZ MONZONITE
TRIASSIC MUDSTONE AND LIMESTONE
PENNSYLVANIAN TO TRIASSIC LIMESTONE AND SANDSTONE
PROTEROZOIC TO CRETACEOUS SCHIST AND GNEISS

0 2 4
Miles

Source: USGS 2019a

IMAGERY SOURCE: ESRI ONLINE NATIONAL GEOGRAPHIC AND WORLD IMAGERY 2015

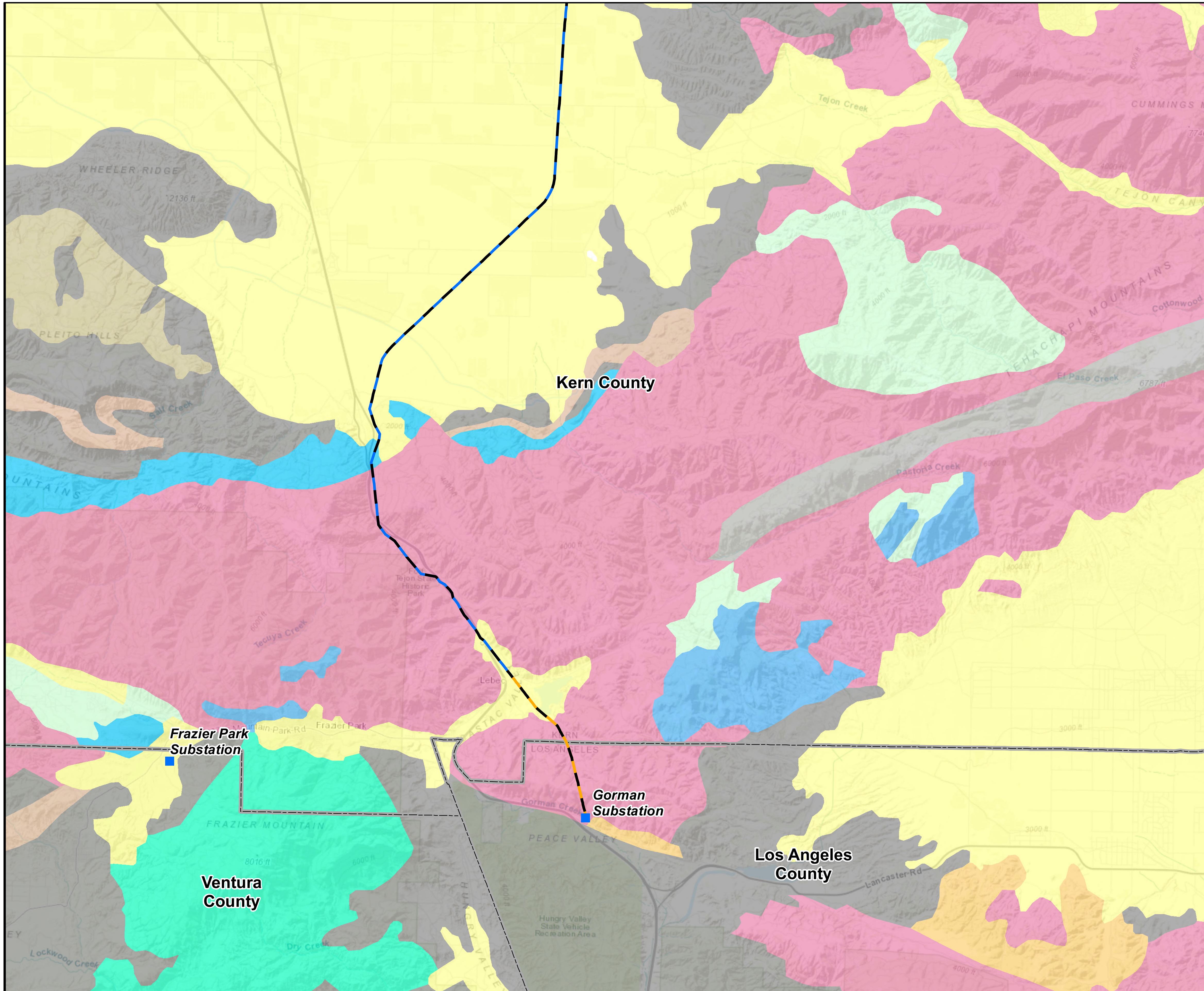
**GORMAN-KERN RIVER 66 kV PROJECT**

**GENERALIZED GEOLOGIC MAP**

ARCADIS

FIGURESET 5.7-6.b

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-7-6_Generalized Geologic Map.mxd 6/16/2021 2:13:17 PM




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

N

Legend

- SUBSTATION
- SEGMENT 2
- SEGMENT 3
- COUNTIES
- PLIOCENE TO HOLOCENE ALLUVIUM AND TERRACE DEPOSITS
- QUATERNARY BASALT AND TEPHRITE
- TERTIARY RHYOLITE AND BASALT
- OLIGOCENE TO PLEISTOCENE SANDSTONE, MUDSTONE, AND CONGLOMERATE
- LATE CRETACEOUS TO EOCENE MICA SCHIST
- PRIMARILY MESOZOIC GRANODIORITE AND QUARTZ MONZONITE
- TRIASSIC MUDSTONE AND LIMESTONE
- PENNSYLVANIAN TO TRIASSIC LIMESTONE AND SANDSTONE
- PROTEROZOIC TO CRETACEOUS SCHIST AND GNEISS
- PROTEROZOIC TO CRETACEOUS SCHIST AND GNEISS

0 2 4

Miles

Source: USGS 2019a

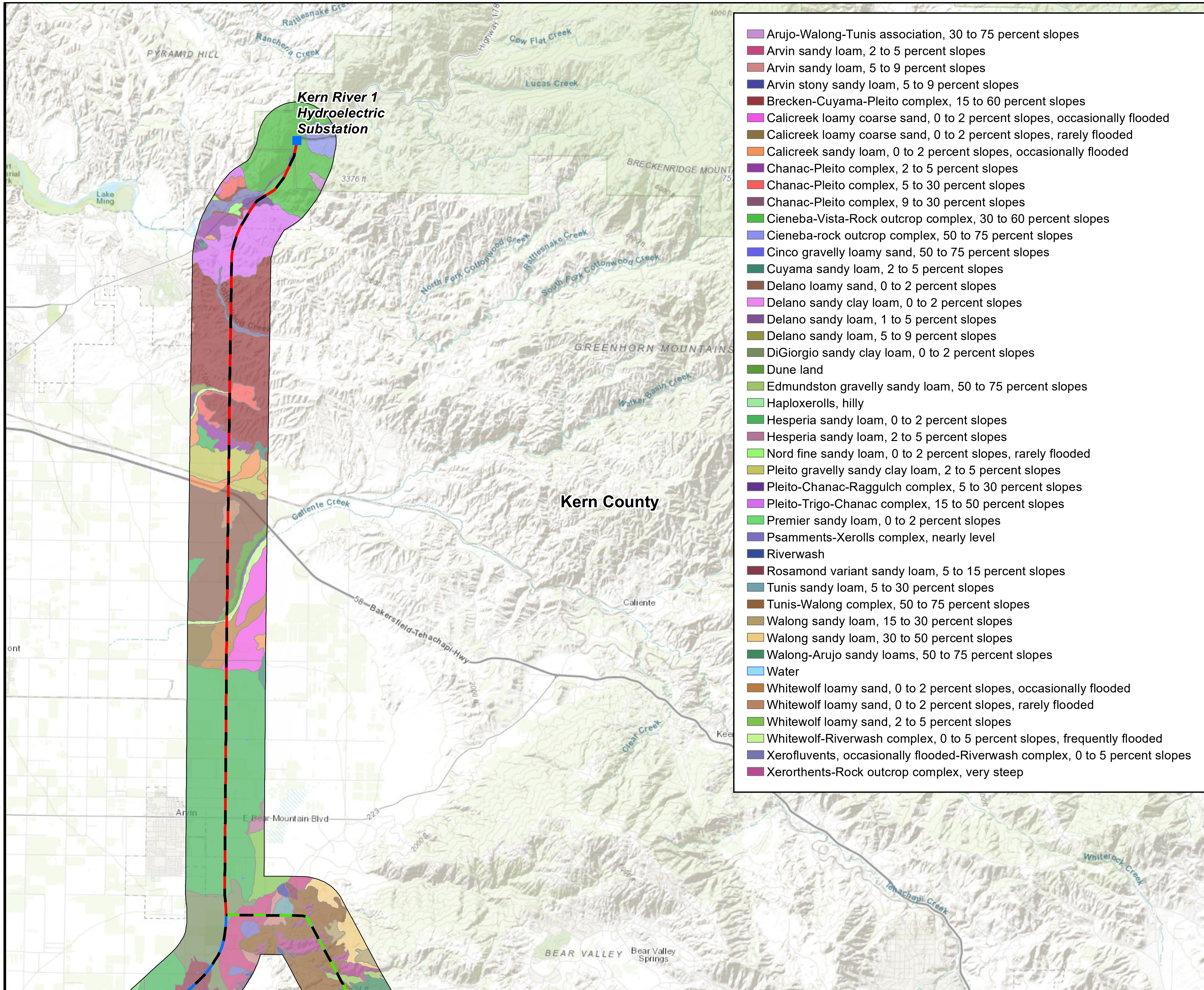
IMAGERY SOURCE: ESRI ONLINE NATIONAL GEOGRAPHIC AND WORLD IMAGERY 2015

**GORMAN-KERN RIVER 66 kV PROJECT**

**GENERALIZED GEOLOGIC MAP**

ARCADIS

FIGURESET 5.7-6.c




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

Legend

- SUBSTATION
- SEGMENT 1
- SEGMENT 2
- SEGMENT 4
- COUNTIES

0 2 4
Miles

Source: NRCS 2019a

IMAGERY SOURCE: ESRI ONLINE NATIONAL GEOGRAPHIC AND WORLD IMAGERY 2015

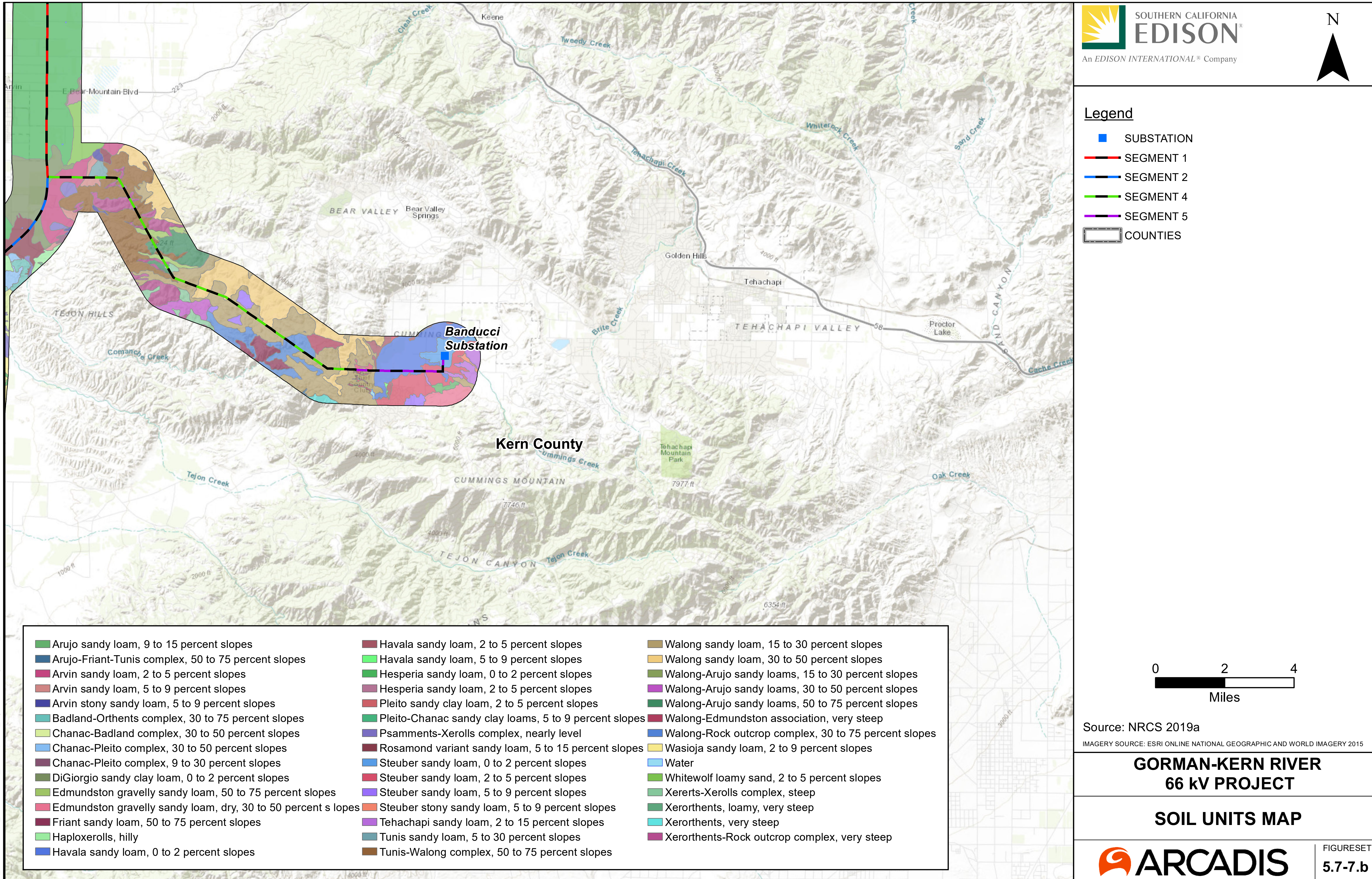
**GORMAN-KERN RIVER 66 kV PROJECT**

**SOIL UNITS MAP**

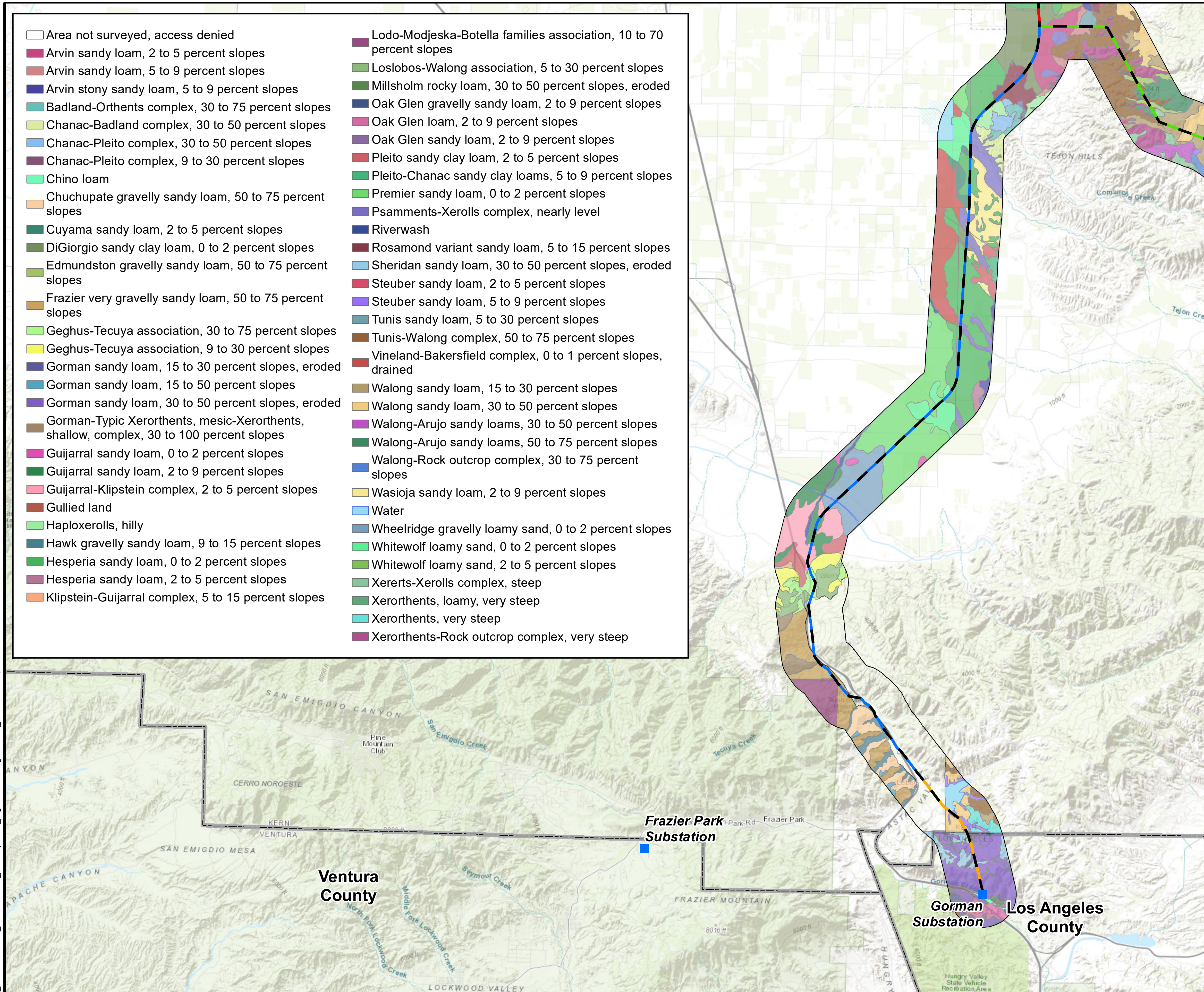
ARCADIS

FIGURESET 5.7-7.a

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-7-7_Soil Units Map1.mxd 6/16/2021 5:01:59 PM




T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-7-7_Soil Units Map2.mxd 6/16/2021 3:25:01 PM




SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

Legend

- SUBSTATION
- SEGMENT 1
- SEGMENT 2
- SEGMENT 3
- SEGMENT 4
- COUNTIES

0 2.5 5
Miles

Source: NRCS 2019a

IMAGERY SOURCE: ESRI ONLINE NATIONAL GEOGRAPHIC AND WORLD IMAGERY 2015

**GORMAN-KERN RIVER 66 kV PROJECT**

**SOIL UNITS MAP**

ARCADIS

FIGURESET
5.7-7.c

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-7-7_Soil Units Map3.mxd 6/16/2021 2:57:42 PM

# 5.8 Greenhouse Gas Emissions

This Section of the PEA describes the greenhouse gas (GHG) regulations that are applicable to electrical transmission projects and evaluates the potential impacts from construction and operation of the GKR Project.

## 5.8.1 Environmental Setting

### *5.8.1.1 GHG Setting*

GHGs refer to gases that trap heat in the atmosphere, causing a greenhouse effect. GHGs include, but are not limited to, carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride ($SF_6$). Atmospheric concentrations of the two most important directly emitted, long-lived GHGs, $CO_2$ and $CH_4$, are currently well above the range of atmospheric concentrations that occurred over the last 650,000 years (Pew Center 2008). According to the Intergovernmental Panel on Climate Change (IPCC), increased atmospheric levels of $CO_2$ are correlated with rising temperatures; concentrations of $CO_2$ have increased by 31 percent above pre-industrial levels since the year 1750. Climate models show that temperatures will probably increase by 1.4 degrees Celsius (°C) to 5.8°C by the year 2100 (IPCC 2007).

Global warming potential (GWP) estimates how much a given mass of a GHG contributes to climate change. The term enables comparison of the warming effects of different gases. GWP uses a relative scale that compares the warming effect of the gas in question with that of the same mass of $CO_2$. The $CO_2$ equivalent ($CO_2e$) is a measure used to compare the effect of emissions of various GHGs based on their GWP, when projected over a specified time period (generally 100 years). $CO_2e$ is commonly expressed as million metric tons (MMT) of $CO_2$ equivalents ($MMTCO_2e$). The $CO_2e$ for a gas is obtained by multiplying the mass of the gas (in tons) by its GWP.

## 5.8.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the GKR Project.

### *5.8.2.1 Regulatory Setting*

#### 5.8.2.1.1 Federal

##### *5.8.2.1.1.1 Federal Mandatory Reporting of Greenhouse Gases (Section 40 CFR Part 98*

The United States Environmental Protection Agency (EPA) promulgated this rule in 2009 to require mandatory reporting of GHG from large GHG emissions sources in 31 source categories in the United States. In general, the threshold for reporting is 25,000 metric tons or more of $CO_2e$. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial GHGs, along with vehicle and engine manufacturers, report at the corporate level. Facilities and suppliers began collecting data on January 1, 2010. The first emissions report was due on March 31, 2011, for emissions during 2010. Manufacturers of vehicles and engines outside of the light-duty sector began reporting $CO_2$ for model year 2011 and other GHGs in subsequent model years as part of existing EPA certification programs.

Since 2012, EPA regulations also require the reporting of $SF_6$ emissions from certain electrical facilities. See 40 CFR Part 98, Subpart DD. SCE complies with these requirements. Furthermore, SCE has developed and would implement $SF_6$ gas management guidelines as described in SCE's document entitled "An Asset Management Approach for EPA/CARB $SF_6$ Regulations," dated April 2012. This document includes an overview of the tools and methods that SCE utilizes to comply with both EPA's Voluntary $SF_6$ Emission Reduction Partnership program and CARB's $SF_6$ Regulations. Following the guidelines in this document would ensure compliance with these regulations. This guideline document identifies storage methods, disposal method alternatives, and record-keeping requirements. Inventories are documented and annually reported to USEPA and CARB.

#### 5.8.2.1.2 State

##### *5.8.2.1.2.1 Executive Order B-30-15*

Executive Order B-30-15 establishes an interim GHG reduction target of 40 percent below 1990 levels and directs state agencies to take additional actions to prepare for the impacts of climate change. These actions are captured in the state's adaptation strategy, Safeguarding California, which is to be updated every 3 years.

##### *5.8.2.1.2.2 Executive Order B-55-18*

Executive Order B-30-15 establishes a new statewide goal to "achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." The goal is in addition to the existing statewide targets of reducing GHG emissions.

##### *5.8.2.1.2.3 Global Warming Solutions Act of 2006 (Assembly Bill 32)*

The California Global Warming Solutions Act of 2006 (Assembly Bill 32) charges the CARB with the responsibility of monitoring and regulating sources of GHG emissions in order to reduce those emissions. The CARB established a scoping plan in December 2008 for achieving reductions in GHG emissions and has established and implemented regulations for reducing those emissions by the year 2020.

##### *5.8.2.1.2.4 California Global Warming Solutions Act of 2006*

The California Global Warming Solutions Act of 2006 (Senate Bill 32) expands upon AB 32 to reduce GHG emissions. The Bill requires CARB to reduce GHG emissions to 40% below the 1990 levels by 2030. This bill gives CARB the authority to adopt regulations in order to achieve the maximum technology feasible to be the most cost-efficient way to reduce GHG emissions.

##### *5.8.2.1.2.5 Climate Change Scoping Plan*

The CARB's Climate Change Scoping Plan was developed in response to Executive Order B-30-15 and SB 32; the Plan establishes a path that will get California to its 2030 target.

##### *5.8.2.1.2.6 California Mandatory Greenhouse Gas Reporting Regulation (17 California Code of Regulations §§ 95100 – 95133)*

Pursuant to AB 32, CARB adopted the Mandatory Greenhouse Gas Reporting Regulation. The facilities required to annually report their GHG emissions include electricity-generating facilities, electricity retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and industrial sources that emit over 25,000 metric tons per year of $CO_2$ from stationary source combustion. In particular, retail providers of electricity are required to report fugitive emissions of $SF_6$ related to transmission and distribution systems, substations, and circuit breakers located in California that the retail provider or marketer is responsible for maintaining in proper working order. SCE complies with these requirements.

##### *5.8.2.1.2.7 Senate Bill 100*

Senate Bill 100, signed into law in September 2018, amends the California Renewables Portfolio Standard (RPS) Program. The RPS Program requires the CPUC to establish a renewables portfolio standard requiring all retail sellers of electricity to procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt-hours of those products sold to their retail end-use customers achieve 25 percent of retail sales by December 31, 2016, 33 percent by December 31, 2020, 44 percent by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030. SB 100 also establishes a state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of retail sales by 2045. The RPS Program additionally requires each local publicly owned electric utility to procure a minimum quantity of electricity products from eligible renewable energy resources to achieve the procurement requirements established by the program.

#### 5.8.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the GKR Project. Pursuant to GO 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the GKR Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

##### *5.8.2.1.3.1 Eastern Kern Air Pollution Control District*

The EKAPCD has adopted an addendum to their EKAPCD CEQA Guidelines, titled *Addressing GHG Emission Impacts for Stationary Source Projects When Serving as the Lead CEQA Agency*. This addendum establishes a significance threshold of 25,000 $MTCO_2e$ per year.

##### *5.8.2.1.3.2 San Joaquin Valley Air Pollution Control District*

In August 2008, the SJVAPCD's Governing Board adopted the Climate Change Action Plan (CCAP). The CCAP directed the District Air Pollution Control Officer to develop guidance to assist Lead Agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project specific GHG emissions on global climate change.

On December 17, 2009, the San Joaquin Valley Air Pollution Control District (District) adopted the guidance: *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA and the policy: District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*. The guidance and policy rely on the use of performance based standards, otherwise known as Best Performance Standards (BPS), to assess significance of project specific GHG emissions on global climate change during the environmental review process, as required by CEQA. The SJVAPCD has not established a significance threshold or BPS that are applicable to the GKR Project.

##### *5.8.2.1.3.3 South Coast Air Quality Management District*

In October 2008, the SCAQMD prepared its *Draft Interim California Environmental Quality Act (CEQA) Greenhouse Gas Significance Threshold*. To evaluate operational impacts of proposed industrial projects, the SCAQMD recommended an interim threshold of 10,000 $MTCO_2e$ per year. Per SCAQMD guidance, construction emissions should be amortized over the operational life of a project, which is proposed at 30 years.

### 5.8.3 Impact Questions

#### *5.8.3.1 Impact Questions*

The significance criteria for assessing the impacts from GHG emissions are derived from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions

#### *5.8.3.2 Additional CEQA Impact Questions*

There are no CPUC-identified additional CEQA impact questions.

### 5.8.4 Impact Analysis

#### *5.8.4.1 Impact Analysis*

##### 5.8.4.1.1 Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

*5.8.4.1.1.1 Construction and Operation*

**Less than Significant Impact.** GHG emissions would be generated from operation of heavy equipment, support vehicles and helicopters. The most common GHGs associated with fuel combustion are $CO_2$, $CH_4$, and $N_2O$. Annual GHG emissions were estimated for construction activities using the CalEEMod model for both on-road and off-road sources. Helicopter emissions were estimated based on the Swiss Federal Office of Civil Aviation (FOCA) Guidance on the Determination of Helicopter Emissions (FOCA 2015).

Construction activities would result in emissions of GHG over the construction period. Construction activities would result in exhaust emissions from vehicular traffic, as well as from construction equipment and machinery. Over the construction period, approximately 4,495 $MTCO_2e$ would be emitted. GHG construction emissions from future activities amortized over 30 years is approximately 150 $MTCO_2e$. As explained in Section 5.3, operational emissions would not differ in scope or scale from activities currently conducted. Thus, the estimated annual emission of GHGs from the operation of the infrastructure replaced under the GKR Project is unchanged from the current O&M-related emissions. Combined, the 150 $MTCO_2e$ emissions associated with construction and operations would be well below the 10,000 $MTCO_2e$ threshold of significance established by the SCAQMD and the 25,000 $MTCO_2e$ threshold of significance established by the EKAPCD Addendum. Therefore, the GKR Project would not generate, either directly or indirectly, GHG emissions that would have a significant impact on the environment, and impacts would be less than significant.

##### 5.8.4.1.2 Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

*5.8.4.1.2.1 Construction*

**No Impact.** Construction of the GKR Project would be consistent with applicable policies, plans, and regulations for reducing GHG emissions. The GKR Project would incorporate best management practices and other standard SCE practices, such as reducing the idle time of construction vehicles, that are consistent with the requirements and intentions of the federal and state plans, polices, and regulations. Construction activities would not be expected to consume a substantial amount of energy that would result in a conflict with policies that serve to reduce GHG emissions through a reduction in energy consumption. As presented above, GHG construction emissions from activities amortized over 30 years would be approximately 150 $MTCO_2e$. GHG emissions would fall well below the SCAQMD and EKAPCD numerical thresholds of significance. Therefore, the GKR Project would not conflict with any applicable plan, policy, or regulation, and no impact would occur under this criterion.

##### *5.8.4.1.2.2 Operation*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts would be realized under this criterion during operations and maintenance.

### *5.8.4.2 GHG Emissions*

A quantitative assessment of GHG emissions is presented above in Section 5.8.4.1.1.1. Model results and files accompany those developed for the air quality analysis and as addressed in Section 5.3. A discussion of programs in place to reduced GHG emissions on a system-wide level is unnecessary because the GKR Project does not include the installation of new GHG-emitting infrastructure, and because no significant impacts have been identified.

## 5.8.5 CPUC Draft Environmental Measures

SCE will, at the direction of the CPUC, implement the following CPUC Draft Environmental Measure during construction of the GKR Project:

**Greenhouse Gas Emissions Reduction During Construction**

The following measures shall be implemented to minimize GHG emissions from all construction sites:

- If suitable park-and-ride facilities are available in the project vicinity, construction workers shall be encouraged to carpool to the job site.
- The Applicant shall develop a carpool program to the job site.
- On road and off-road vehicle tire pressures shall be maintained to manufacturer specifications. Tires shall be checked and re-inflated at regular intervals.
- Demolition debris shall be recycled for reuse to the extent feasible.
- The contractor shall use line power instead of diesel generators at all construction sites where line power is available.
- The contractor shall maintain construction equipment per manufacturing specifications.

Page intentionally left blank.

## 5.9 Hazards, Hazardous Materials, and Public Safety

This Section of the PEA describes the hazards and hazardous materials along the GKR Project alignment, as well as the potential impacts associated with construction and operation of the GKR Project.

### 5.9.1 Environmental Setting

As described in Section 5.11.1, the existing land use along the GKR Project alignment is primarily open space and dedicated to agricultural use, with scattered residential, rural residential, light industrial, and institutional uses. These land uses have remained relatively unchanged over time.

#### *5.9.1.1 Hazardous Materials Report*

Data that is presented through the CalEPA Regulated Site Portal was queried utilizing GIS software; the project area utilized during the query is defined as the material yards and construction work areas described in Sections 3.5.2 and 3.5.3, and as presented in Appendix A. The result of this query is presented in Appendix F and summarized in Table 5.9-1.

**Table 5.9-1. CalEPA Regulated Site Portal Query Results**

| Project Segment | Database | Facility Name | Location | Type |
|---|---|---|---|---|
| 1 | California Environmental Reporting System | SCE Kern River Powerhouse 1 | 21400 Highway 178, Bakersfield | Chemical Storage Facility |
| 2 | California Integrated Water Quality System | Line 2000 Tejon Anomaly Project Site | Grapevine Creek; behind Tejon School | Wetlands - Fill and Dredge Material |
| 3 | California Environmental Reporting System | SCE Gorman Substation | 39439 Gorman Post Road, Lebec | Chemical Storage Facility |
| 5 | California Environmental Reporting System | SCE Banducci Substation | SE c/o Dale Road and Pellisier Road, Tehachapi | Chemical Storage Facility |
| 5 | Storm Water Multiple Application and Report Tracking System (SMARTS) | Tanager 12kV | 27599 Banducci Road, Tehachapi | Construction Storm Water |

Neither the SCE Gorman Substation (Segment 3) nor the SCE Banducci Substation (Segment 5) were identified during the GIS-based query of the data presented through the Cal EPA Regulated Site Portal; however, each of these facilities is known to be a Chemical Storage Facility and thus presented above.

#### *5.9.1.2 Airport Land Use Plan*

The Kern County Airport Land Use Compatibility Plan has been developed and adopted at a local level, including Kern County and the incorporated cities of Bakersfield and Tehachapi. No portion of the GKR Project alignment is located within the planning boundary of any public airport addressed in this Plan. No portion of the GKR Project alignment is located withing the planning boundary of any public airport.

#### *5.9.1.3 Fire Hazard*

Within California, fire hazard severity zones are designated by the California Department of Forestry and Fire Protection (CAL FIRE). Fire hazard severity zones are administered by the federal, state, or local government that is financially responsible for preventing and suppressing wildfires in a given area, and are categorized into the following three groups:

- Federal Responsibility Areas: The federal government is financially responsible for wildfire suppression. Those portions of the GKR Project alignment located on SNF (Segment 1) and LPNF (Segment 2) are identified as Federal Responsibility Areas.

- State Responsibility Areas: The state is financially responsible for wildfire suppression. Portions of Segments 1, 2, the entirety of Segment 3, the majority of Segment 4, and portions of Segment 5 are identified as State Responsibility Areas.
- Local Responsibility Areas: Cities or counties are financially responsible for wildfire suppression. Portions of Segments 1, 2, and 5 are identified as Local Responsibility Areas.

On December 21, 2017, the CPUC issued Decision (D.) 17-12-024 adopting regulations to enhance fire-safety in the HFTD, effectively completing the second track of R.15-05-006 described above. On January 19, 2018 the CPUC adopted, via Safety and Enforcement Division's (SED) disposition of a Tier 1 Advice Letter, the final CPUC Fire-Threat Map. The adopted CPUC Fire-Threat Map, together with the map of Tier 1 High Hazard Zones (HHZs) on the USFS-CAL FIRE joint map of tree mortality HHZs, comprise the HFTD Map where stricter fire-safety regulations apply.

CAL FIRE is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones are referred to as Fire Hazard Severity Zones (FHSZs). The majority of the GKR Project alignment is located within the CAL FIRE moderate or high fire hazard severity zones; the southern portion of Segment 3 is located in an area designated as a very high fire hazard severity area. Those portions of Segments 1 and 2 that traverse agricultural areas are unzoned. Tabular information on the miles of GKR Project alignment located within these zones is presented in Table 5.9-2 below, and shown graphically on Figure 5.20-1.

The CPUC Fire-Threat Map is a single statewide fire-threat map that designates areas where (1) there is an elevated risk for destructive power line fires, and (2) where stricter fire-safety regulations should apply. CPUC Fire-Threat Map data are presented in Figure 5.20-3; as seen in Figure 5.20-3, the eastern portion of Segment 4 and the entirety of Segment 5 are located in CPUC-designated Fire Threat Area Tier 3 – Extreme areas. The northern portion of Segment 1, the southern portion of Segment 2, the entirety of Segment 3, and the central portion of Segment 4 are located in CPUC-designated Fire Threat Area Tier 2 – Elevated areas No other portion of the GKR Project is located in a CPUC-designated Fire Threat Area.

**Table 5.9-2. Miles of GKR Project Alignment within Designated Fire Hazard Severity Zones**

| Project Segment | Fire Hazard Severity Zone | Distance (miles) | SRA* | LRA* | FRA* | CPUC FTA* |
|---|---|---|---|---|---|---|
| 1 | High | 1.80 | 5.26 | 14.70 | 0.38 | Elevated; ~3.5 miles |
| 1 | Moderate | 3.54 | | | | |
| 1 | Unzoned | 15.01 | | | | |
| 2 | High | 7.67 | 11.46 | 15.37 | 0.08 | Elevated; ~3.6 miles |
| 2 | Unzoned | 15.54 | | | | |
| 3 | Very High | 2.88 | 4.03 | 0.00 | 0.00 | Elevated; ~3.4 miles |
| 3 | High | 0.00 | | | | |
| 3 | Moderate | 1.15 | | | | |
| 4 | High | 9.69 | 10.22 | 1.11 | 0.00 | Extreme; ~2.3 miles<br>Elevated; ~7.1 miles |
| 4 | Moderate | 0.53 | | | | |
| 5 | High | 2.06 | 2.25 | 0.75 | 0.00 | Extreme; ~3 miles |
| 5 | Moderate | 0.94 | | | | |

*Abbreviations:
FRA: Federal Responsibility Area
LRA: Local Responsibility Area
FTA: Fire Threat Area
SRA: State Responsibility Area

### *5.9.1.4 Metallic Objects*

The GKR Project alignment crosses, or is otherwise located nearer than 25 feet to, numerous crude oil and natural gas pipelines; these are shown in Figure 5.9-1 (Cal OES 2020; CEC 2020).

The GKR Project alignment crosses, or is otherwise located nearer than 25 feet to, metallic cable (i.e., electrical conductor) in the vicinity of Banducci Substation.

## 5.9.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the GKR Project.

### *5.9.2.1 Regulatory Setting*

#### 5.9.2.1.1 Federal

##### *5.9.2.1.1.1 Clean Air Act*

The Clean Air Act (CAA; 42 U.S.C. § 7401 et seq.) provides measures aimed at preventing the accidental release of hazardous materials into the atmosphere. Regulations implementing the CAA and governing hazardous materials emissions are provided in Title 40, Part 68 of the CFR. Implementation of these regulations is intended to prevent the accidental release of hazardous materials into the environment.

##### *5.9.2.1.1.2 Clean Water Act (33 U.S.C. Section 1251 et seq.)*

Enacted in 1972, the Federal Clean Water Act (CWA; 33 U.S.C. § 1251 et seq.) and subsequent amendments outline the basic protocol for regulating discharges of pollutants to waters of the U.S. It is the primary federal law applicable to water quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. Enforced by the USEPA, it was enacted "… to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The CWA authorizes States to adopt water quality standards and includes programs addressing both point and non-point pollution sources. The CWA also established the NPDES, and provides the USEPA the authority to implement pollution control programs, such as setting wastewater standards for industry and water quality standards for surface waters (see below for a discussion of the NPDES program).

In California, programs and regulatory authority under the CWA have been delegated by USEPA to the SWRCB and its nine RWQCBs. Under Section 402 of the CWA as delegated to the State of California, a discharge of pollutants to navigable waters is prohibited unless the discharge complies with an NPDES permit. The SWRCB and RWQCBs have developed numeric and narrative water quality criteria to protect beneficial uses of state waters and waterways.

##### *5.9.2.1.1.3 CFR Title 14*

All airports and navigable airspace not administered by the DoD are under the jurisdiction of the FAA. Title 14, Part 77 of the CFR establishes the standards and required notification for objects affecting navigable airspace. In general, construction projects exceeding 200 feet in height—or those extending at a ratio greater than 100 to 1 (horizontal to vertical) from a public or military airport runway more than 3,200 feet long, out to a horizontal distance of 20,000 feet—are considered potential obstructions and require FAA notification. In addition, construction projects extending at a ratio greater than 50 to 1 (horizontal to vertical) from a public or military airport runway measuring 3,200 feet or less, out to a horizontal distance of 10,000 feet, are considered potential obstructions and require FAA notification. Title 14, Part 133 of the CFR also requires an operating plan to be developed in coordination with and approved by the local FAA Flight Standards District Office that has jurisdiction over when helicopter use would be required.

*5.9.2.1.1.4 Comprehensive Environmental Response, Compensation, and Liability Act (Superfund) of 1980 (42 U.S.C. §9601 et seq.)*

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) provides a federal Superfund to clean up uncontrolled or abandoned hazardous-waste sites, as well as accidents, spills, and other emergency releases of pollutants and contaminants into the environment. Through CERCLA, EPA has the power to seek out those parties responsible for any release and ensure their cooperation in the cleanup.

*5.9.2.1.1.5 Occupational Safety and Health Administration (29 CFR 1900-1910)*

Established under the Occupational Safety and Health Administration Act of 1970, the Administration regulates workplace safety and health. The agency's mission is to prevent work-related injuries, illnesses, and deaths.

*5.9.2.1.1.6 Resource Conservation and Recovery Act (42 U.S.C. §6901 et seq.)*

The Resource Conservation and Recovery Act (RCRA) regulates hazardous waste from the time that waste is generated, through to its management, storage, transport, and treatment, until its final disposal. The EPA has authorized the DTSC in California and the NDEP to administer their respective RCRA programs.

*5.9.2.1.1.7 The Superfund Amendments and Reauthorization Act of 1986 Title III (40 CFR 68.110 et seq.)*

The Superfund Amendments and Reauthorization Act (SARA) amended CERCLA and established a nationwide emergency planning and response program, and imposed reporting requirements for businesses that store, handle, or produce significant quantities of extremely hazardous materials. The act requires states to implement a comprehensive system to inform local agencies and the public when a significant quantity of such materials is stored or handled at a facility. Additionally, SARA identifies requirements for planning, reporting, and notification concerning hazardous materials.

*5.9.2.1.1.8 Hazardous Materials Transportation Act (49 U.S.C. § 5101 et seq)*

The U.S. Department of Transportation has the regulatory responsibility for the safe transportation of hazardous materials under the Hazardous Materials Transportation Act (HMTA), as amended and codified in 49 U.S.C. § 5101 et seq.

**5.9.2.1.2 State**

*5.9.2.1.2.1 California Emergency Management Agency*

The California Emergency Management Agency (Cal/EMA) was formed January 1, 2009, as the result of a merger between the Governor's Office of Emergency Services (OES) and the Office of Homeland Security (OHS). The Hazardous Materials Unit of the Cal/EMA is responsible for hazmat emergency planning and response, spill release and notification, and hazmat enforcement of the Unified Program.

*5.9.2.1.2.2 California Environmental Protection Agency*

The California Environmental Protection Agency (Cal/EPA) is the California state agency responsible for developing, implementing, and enforcing the state's environmental protection laws that ensure clean air, clean water, clean soil, safe pesticides, and waste recycling and reduction. Cal/EPA oversees the DTSC and SWRCB. Cal/EPA has implementation authority for the Unified Hazardous Waste and Hazardous

Materials Management Regulatory Program (Unified Program) per CCR Title 27, Division 1, Subdivision 4, Chapter 1.

##### *5.9.2.1.2.3 California Public Utilities Commission General Order 95*

GO 95 contains requirements and specifications for overhead electrical line construction. These requirements are intended to ensure safety to workers engaged in the construction, O&M, and use of electrical facilities. The regulations are also intended to ensure the general reliability of the State's utility infrastructure and services. Rule 35 of GO 95 establishes minimum clearances between line conductors and nearby vegetation for fire prevention purposes. These minimum clearances must be maintained through tree trimming prior to construction and throughout O&M of utility facilities.

##### *5.9.2.1.2.4 California Public Utilities Commission General Order 166*

The purpose of the standards contained in GO 166 is to ensure that jurisdictional electric utilities are prepared for emergencies and disasters in order to minimize damage and inconvenience to the public which may occur as a result of electric system failures, major outages, or hazards posed by damage to electric distribution facilities. The standards require, among others, that each jurisdictional electric utility prepare an emergency response plan and update the plan annually; conduct annual emergency training and exercises using the utilities emergency response plan; and coordinate emergency plans with state and local public safety agencies.

##### *5.9.2.1.2.5 California State Hazard Mitigation Plan*

The 2018 California State Hazard Mitigation Plan (SHMP) represents the state's primary hazard mitigation guidance document. The 2018 SHMP continues to build upon the state's commitment to reduce or eliminate potential risks and impacts of natural and human-caused disasters to help communities with their mitigation and disaster resiliency efforts. The 2018 plan includes: an updated statewide risk assessment, disaster history, and statistics; recent mitigation progress, success stories, and best practices; updated state hazard mitigation goals, objectives, and strategies; and updated climate mitigation progress and adaptation strategies. FEMA approved California's 2018 SHMP on September 28, 2018.

##### *5.9.2.1.2.6 Department of Toxic Substances Control*

Under Government Code Section 65962.5(a), the DTSC is required to compile and update as appropriate, but at least annually, and submit to the Secretary for Environmental Protection a list of all of the following: 1) All hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code. 2) All land designated as hazardous waste property or border zone property pursuant to Article 11 (commencing with Section 25220) of Chapter 6.5 of Division 20 of the Health and Safety Code.

##### *5.9.2.1.2.7 Division of California Occupational Safety and Health, Department of Industrial Relations*

The Division of California Occupational Safety and Health protects workers and the public from safety hazards (CCR Title 8.)

##### *5.9.2.1.2.8 Health and Safety Code § 13009*

Health and Safety Code Section 13009 permits CAL FIRE to file civil actions to recover fire suppression costs from a party who causes a fire (1) negligently, or (2) in violation of a law or an order to correct a fire hazard. CAL FIRE established a Civil Cost Recovery (CCR) Program to satisfy the statute's intent to assign financial responsibility to culpable parties and to prevent fires through deterrence.

#### *5.9.2.1.2.9 Public Resources Code §§ 4292-4293*

Public Resources Code (PRC) Section 4292 requires a 10-foot clearance of any tree branches or ground vegetation from around the base of power poles carrying more than 110 kV. The firebreak clearances required by PRC Section 4292 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer or lightning arrester is attached and surrounding each deadend or corner pole. PRC Section 4293 presents guidelines for line clearance including a minimum of 10 feet of vegetation clearance from any conductor operating at 110 kV or higher.

### 5.9.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the GKR Project. Pursuant to GO 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the GKR Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

#### *5.9.2.1.3.1 Certified Unified Program Agency (CUPA)*

The CUPA is the agency certified by the DTSC to conduct the Unified Program. The program consists of hazardous waste generator and on-site treatment programs, above-ground and underground storage tank programs, Hazardous Materials Management, Business Plans, and Inventory Statements, and the Risk Management and Prevention Program.

#### *5.9.2.1.3.2 Kern County Environmental Health Services Division*

The Kern County Environmental Health Services Division is the CUPA responsible for administering the hazardous materials program within Kern County.

#### *5.9.2.1.3.3 Kern County Multi-Jurisdiction Hazard Mitigation Plan*

Kern County and several participating jurisdictions prepared in 2012 a Comprehensive Update to the Multi-Jurisdiction Hazard Mitigation Plan (MHMP), originally approved by FEMA in 2006. The purpose of this plan is to guide hazard mitigation planning to better protect the people and property of the County from the effects of hazard events. The plan demonstrates the commitment of each participating jurisdiction to reducing risks from hazards and serves as a tool to help decision makers direct mitigation activities and resources.

#### *5.9.2.1.3.4 Los Angeles County Fire Department*

Los Angeles County Fire Department is the CUPA responsible for administering the hazardous materials program within the area of northern Los Angeles County where the GKR Project would be located.

## *5.9.2.2 Touch Thresholds*

### 5.9.2.2.1 California Division of Occupational Safety and Health

California Division of Occupational Safety and Health (Cal/OSHA) regulations on electrical safety require California employers to provide workers with a safe and healthful workplace. These regulations are contained in Title 8 of the California Code of Regulations. Most of the electrical health and safety regulations can be found in Chapter 4, Subchapter 5 in the Electrical Safety Orders, Sections 2299 through 2989.

Cal/OSHA regulations on electrical safety are grouped by electrical voltage. Regulations for low voltage (0-600V) are given in Sections 2299-2599 and the regulations for high voltage (above 600V) are given in Sections 2700-2989. Section 1518 addresses the safety requirements for the protection of workers and others from electric shock in construction.

### 5.9.3 Impact Questions

#### *5.9.3.1 Impact Questions*

The significance criteria for assessing the impacts to hazards and hazardous materials come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school
- Be located on a site that is included on a list of hazardous material sites, compiled pursuant to Government Code Section 65962.5, and as a result would create a significant hazard to the public or the environment
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, the project would result in a safety hazard or excessive noise for people residing or working in the project area
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires

#### *5.9.3.2 Additional CEQA Impact Questions*

The CPUC has identified additional CEQA significance criteria. According to these additional CEQA significance criteria, a project causes a potentially significant impact if it would:

- Create a significant hazard to air traffic from the installation of new power lines and structures.
- Create a significant hazard to the public or environment through the transport of heavy materials using helicopters?
- Expose people to a significant risk of injury or death involving unexploded ordnance?
- Expose workers or the public to excessive shock hazards?

### 5.9.4 Impact Analysis

### *5.9.4.1 Impact Analysis*

#### 5.9.4.1.1 Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

*5.9.4.1.1.1 Construction*

**Less than Significant Impact with Mitigation.** No acutely hazardous materials would be used or stored on location during construction of the GKR Project. Construction of the GKR Project would require the use of gasoline, diesel fuel, oil, solvents, and lubricants associated with vehicles and construction activities. Hazardous materials management would include compliance with a project-specific SWPPP and an SPCC Plan, if necessary, and implementation of BMPs related to fueling and the handling, use, and storage of hazardous materials. All transport of hazardous materials would comply with applicable laws, rules, and regulations, and would use applicable BMPs, including the acquisition of required shipping papers, package marking, labeling, transport vehicle placarding, training, and registrations. SCE crews and/or SCE's construction contractor would implement proper hazardous materials management activities, which would include preparation and implementation of plan(s) such as a HMMP for the GKR Project before field construction activities begin that would outline the proper procedures for the handling, use, storage, and disposal of hazardous materials.

An inadvertent release could also occur from the use of hazardous materials during construction within temporary storage sites, while transporting hazardous materials to and from work areas, or during refueling and servicing of equipment. However, a GKR Project-specific HMMP, as specified in APM HAZ-1, would be prepared and implemented throughout construction of the GKR Project. The plan would include safety information regarding the transport, use, and disposal of hazardous materials. In addition, all transport, use, and disposal of hazardous materials would be in compliance with applicable laws, rules, and regulations.

Depending on the type, condition, and original chemical treatment, any wood poles removed would be returned to a staging area and either reused by SCE, returned to the manufacturer, disposed of in a Class I hazardous waste landfill, or in a RWQCB-approved Class III landfill or equivalent facility.

Foundations would be sampled for the presence of asbestos prior to the start of removal activities; if a foundation is found to be an asbestos-containing material, it will be properly abated and disposed of in a California Department of Toxic Substances Control (DTSC)-approved landfill that accepts asbestos-containing wastes. Notification to the local air quality management district having jurisdiction over the particular location will be made at least 10 business days prior to any demolition activities.

All hazardous materials would be transported, used, and disposed of in accordance with applicable rules, regulations, and SCE standard protocols designed to protect the environment, workers, and the public. Implementation of APM HAZ-1 would result in less than significant impacts.

*5.9.4.1.1.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.9.4.1.2 Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

*5.9.4.1.2.1 Construction*

**Less than Significant Impact.** Construction of the GKR Project would require the limited use of hazardous materials, such as fuels, lubricants, and cleaning solvents. As described in Chapter 3, fuel storage and refueling of vehicles and helicopters may occur in designated areas during construction activities. A small volume of fuels, lubricants, and solvents with low toxicity are anticipated to be used during the construction of the GKR Project. All hazardous materials would be stored, handled, and used in accordance with applicable regulations, and safety data sheets (SDS) would be available. The most likely incidents involving these hazardous materials are associated with minor spills or drips.

A site-specific construction SWPPP would be prepared and followed, as applicable, to ensure quick response to minor spills and minimal impacts to the environment. The SWPPP would identify the locations for storing hazardous materials during construction, as well as protective measures, notification, and cleanup requirements for any incidental spills or other potential releases of hazardous materials.

In the event of a release of hazardous materials, such as minor spills and drips from construction equipment and refueling, SCE would use the SWPPP as guidance for appropriate handling and response. In addition, implementation of the WEAP as described in Chapter 3 would provide site personnel with instruction on the SWPPP and site-specific BMPs, when applicable.

During construction, the potential exists that subsurface utilities (e.g., a natural gas line) or structures (e.g., an underground storage tank) might be encountered and damaged, resulting in a release of a hazardous material. During construction, screening activities would include contacting DigAlert, conducting visual observations, and using buried line locating equipment. In addition, although impacts under this criterion are expected to be less than significant, SCE also would develop and implement an HMMP per APM HAZ-1, and implementation of that HMMP would further reduce the less-than-significant risk of hazards to the public, workers, and the environment.

*5.9.4.1.2.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.9.4.1.3 Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

*5.9.4.1.3.1 Construction*

**Less than Significant Impact.** The El Tejon School in Lebec is located within one-quarter mile of the GKR Project alignment. Hazardous materials to be used during the construction of the GKR Project would consist of low-toxicity materials including gasoline, diesel fuel, oil, solvents, and lubricants associated with the construction equipment and vehicles and construction activities. The low-toxicity materials would be used at all GKR Project construction sites. All hazardous materials would be stored, handled, and used in accordance with applicable regulations. No acutely hazardous materials (as defined in Tit. 22 Cal. Code Regs. § 66260.10) will be used or stored on location during construction activities.

Although there is only one school located within one-quarter mile of the GKR Project, due to the low toxicity of materials associated with the GKR Project, and implementation of a construction SWPPP that would include good housekeeping, spill containment and response measures, and waste management BMPs, impacts would be less than significant. In addition, although impacts under this criterion are expected to be less than significant, SCE would also develop and implement an HMMP per APM HAZ-1, and implementation of that HMMP would further reduce these less than significant impacts.

##### *5.9.4.1.3.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.9.4.1.4 Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

##### *5.9.4.1.4.1 Construction*

**No Impact.** No component of the GKR Project is located on a site listed pursuant to Government Code Section 65962.5; therefore, no impacts would be realized under this criterion.

##### *5.9.4.1.4.2 Operations*

**No Impact.** No component of the GKR Project is located on a site listed pursuant to Government Code Section 65962.5; therefore, no impacts would be realized under this criterion.

#### 5.9.4.1.5 For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

##### *5.9.4.1.5.1 Construction*

**No Impact.** No portion of the GKR Project is located within an airport land use plan, and there are no public airports or public use airports within two miles of the GKR Project alignment. Therefore, no impacts would be realized under this criterion.

##### *5.9.4.1.5.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.9.4.1.6 Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

##### *5.9.4.1.6.1 Construction*

**Less than Significant Impact.** The GKR Project alignment crosses a number of evacuation routes, including SR-178, SR-158, and several major west-east oriented roadways in Segment 1; no other identified evacuation routes are crossed by the GKR Project alignment.

As discussed in Section 5.17, the GKR Project would not be expected to significantly impact traffic circulation or increase demands on existing emergency response services during temporary construction activities, and would not significantly impact emergency access in the area or increase the demand for existing emergency response services. In addition, although impacts under this criterion are expected to be less than significant because it is not anticipated that construction activities would result in the blockage of any roadways (including those identified as evacuation routes) that could be used in the case of an emergency, in the event that any construction-related activity may result in such a blockage or closure, SCE would also implement APM TRA-1. Therefore, the impacts associated with construction activities would be less than significant under this criterion.

5.9.4.1.6.2 *Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.9.4.1.7 Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

*5.9.4.1.7.1 Construction*

**Less than Significant Impact.** As previously discussed, the majority of the GKR Project alignment is located within the CAL FIRE moderate fire hazard severity zone or in areas that are designated as non-wildland/non-urban land. Portions of the GKR Project are also located within identified very high and high fire hazard severity zones.

High heat or sparks from vehicles or equipment have the potential to ignite dry vegetation and cause fires. However, the GKR Project activities would generally be located within SCE's existing ROW where vegetation will be cleared or trimmed. Vehicles and equipment would primarily use existing roads and would also travel overland to temporary construction areas where and when such a method can be used safely. In addition, SCE would implement standard fire prevention protocols during construction activities and comply with applicable laws and regulations.

In the event that the National Weather Service issues a Red Flag Warning during construction of the GKR Project, additional measures would be implemented to address smoking and fire rules, storage and parking areas, the use of gasoline-powered tools, the use of spark arresters on construction equipment, road closures, the use of a fire guard, fire suppression tools, fire suppression equipment, and training requirements. The portions of the GKR Project area located within moderate to very high fire hazard severity zones would generally be grubbed/trimmed of vegetation and graded before the staging of equipment, thereby minimizing the potential for vehicles or equipment to start a fire. As a result of these measures, construction of the GKR Project would have a less than significant impact to the risk of loss, injury, or death involving wildland fires.

Within California, SCE participates with CAL FIRE, the California Governor's OES, and various city and county fire agencies in the Red Flag Fire Prevention Program, and complies with California PRC Sections 4292 and 4293 related to vegetation management in subtransmission line corridors. The portions of the GKR Project located within moderate or high fire hazard severity zones would generally be cleared of vegetation and graded prior to the staging of equipment, minimizing the risk of construction vehicles starting a fire. Further, SCE's Wildfire Mitigation Plan (Appendix I) describes strategies, programs and activities that are in place, being implemented or are under development by SCE to proactively address and mitigate the threat of electrical infrastructure associated ignitions that could lead to wildfires, further harden the electric system against wildfires and enhance wildfire suppression efforts, meeting the requirements of PUC Section 8386. Based on SCE's participation in the Red Flag Fire Prevention Program and compliance with applicable State and federal laws and regulations during construction, impacts resulting from wildland fire would be less than significant. In addition, although impacts are already expected to be less than significant, SCE would also develop and implement a Fire Prevention and Emergency Response Plan per APM HAZ-3 and implementation of that plan would reduce potential impacts even further.

*5.9.4.1.7.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.9.4.1.8 Would the project create a significant hazard to air traffic from the installation of new power lines and structures?

*5.9.4.1.8.1 Construction*

**No Impact.** No new power lines or structures would be installed under the GKR Project. The GKR Project includes only the replacement of existing power lines and structures in almost entirely the exact same locations and alignments as currently exist. Therefore, the GKR Project would not create a significant hazard to air traffic from the installation of new power lines or structures. Further, prior to construction, SCE will submit the required Notice of Proposed Construction or Alteration to the FAA pursuant to Title 14 CFR, Section 77.9. If the resultant FAA determination calls for the marking or lighting of construction equipment such as cranes, said determinations would be implemented by SCE. Further, SCE will implement APM TRA-2 and will coordinate with local airports regarding helicopter operations and flight plans during project construction, and thus will not result in a safety hazard to air traffic.

*5.9.4.1.8.2 Operations*

**No Impact.** The replacement infrastructure installed under the GKR Project would not create a hazard to air traffic. There are no height restrictions identified for Mountain Valley or Tehachapi airports in the County of Kern Airport Land Use Compatibility Plan. No portion of the GKR Project alignment is located in an area with military requirements for above ground facilities.

Prior to construction, SCE will submit the required Notice of Proposed Construction or Alteration to the FAA pursuant to Title 14 CFR, Section 77.9. With respect to the GKR Project, the FAA would conduct its own analysis and may recommend no changes to the design of the GKR Project; or may make determinations regarding recommended design modifications, which could include, for example, the placement of marker balls on wire spans. SCE would evaluate the FAA determinations for reasonableness and feasibility, and in accordance with Title 14, Part 77 of the CFR, SCE may petition the FAA for a discretionary review of a determination to address any issues with the FAA determination. Through compliance with the determination or the presence of non-GKR Project mitigating factors, potential hazards to air traffic would be eliminated, and therefore there would be no impact under this criterion.

#### 5.9.4.1.9 Would the project create a significant hazard to the public or environment through the transport of heavy materials using helicopters?

*5.9.4.1.9.1 Construction*

**No Impact.** The GKR Project would not create a hazard to the public or environment through the transport of heavy materials using helicopters. SCE, as part of the GKR Project, would develop and implement a Helicopter Use and Safety Plan in accordance with 14 CFR Part 77, and in coordination with and to be approved by the FAA Flight Standards District Office. SCE would also obtain, as necessary, approval of a Congested Area Plan from the FAA. Through these activities and agency coordination, SCE would eliminate the potential for creating a significant hazard to the public or environment through the transport of heavy materials using helicopters, and no impact would be realized under this criterion.

*5.9.4.1.9.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.9.4.1.10 Would the project expose people to a significant risk of injury or death involving unexploded ordnance?

*5.9.4.1.10.1 Construction*

**No Impact.** No portion of the GKR Project alignment overlies a formerly used defense site. Therefore, there would be no impact under this criterion.

*5.9.4.1.10.2 Operations*

**No Impact.** No portion of the GKR Project alignment overlies a formerly used defense site. Therefore, there would be no impact under this criterion.

#### 5.9.4.1.11 Would the project expose workers or the public to excessive shock hazards?

*5.9.4.1.11.1 Construction*

**No Impact.** The design of GKR Project components, and the construction of those components, would be compliant with all applicable federal and state regulations and standards. To reduce shock hazards and avoid electrocution of workers or the public, SCE would comply with the provisions found in Title 8 of the CCR, particularly the electrical health and safety regulations found in Chapter 4, Subchapter 5 in the Electrical Safety Orders, Sections 2700-2989, which are relevant to high voltage work.

*5.9.4.1.11.2 Operations*

**No Impact.** The design of GKR Project components, and the operation and maintenance of those components, would be compliant with all applicable federal and state regulations and standards. To reduce shock hazards and avoid electrocution of workers or the public, SCE would comply with the provisions found in Title 8 of the CCR, particularly the electrical health and safety regulations found in Chapter 4, Subchapter 5 in the Electrical Safety Orders, Sections 2700-2989, which are relevant to high voltage work.

#### *5.9.4.2 Hazardous Materials*

The hazardous materials (i.e., chemicals, solvents, lubricants, and fuels) that would be used during construction and operation of the GKR Project, and an estimate of the quantity of each hazardous material that would be stored on site during construction, are presented in Table 3.5-5.

#### *5.9.4.3 Air Traffic Hazards*

Discussions of how the GKR Project would not conflict with height restrictions identified in the airport land use plan and how the GKR Project would comply with any FAA or military requirements for the above ground facilities are presented above in Section 5.9.4.1.8.

#### *5.9.4.4 Accident or Upset Conditions*

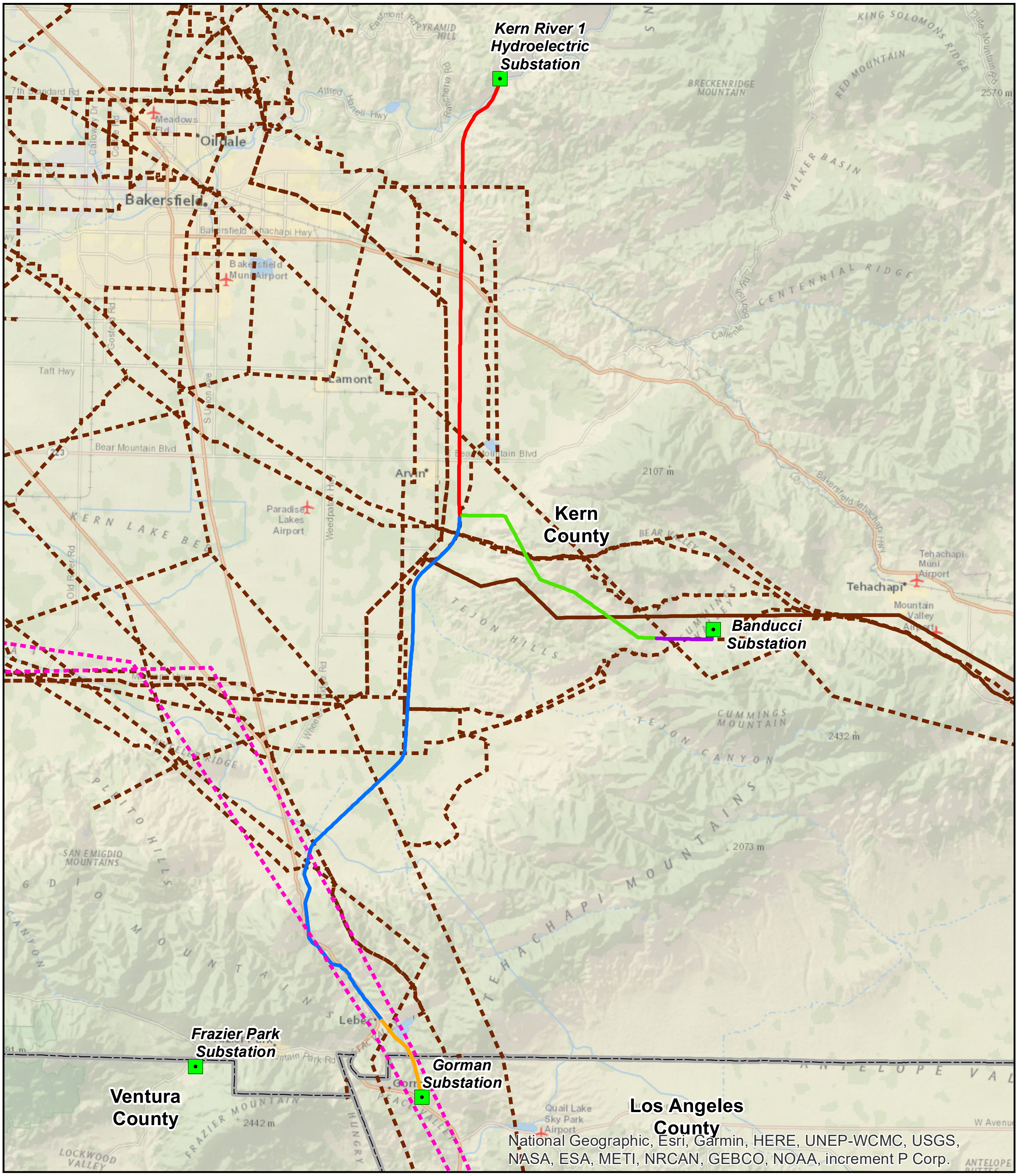
A description of how the GKR Project components would be designed, constructed, operated, and maintained to minimize potential hazard to the public from the failure of project components as a result of accidents or natural catastrophes is presented above in Section 5.9.4.1.2.

#### *5.9.4.5 Shock Hazard*

There is no infrastructure along the GKR Project that may be susceptible to new induced current from the installation of components under the GKR Project. Where infrastructure that may be susceptible to induced current from components of the GKR Project are present, this infrastructure is generally crossed by the GKR Project alignment, rather than running in parallel. Further, the operating conditions of the new conductor would be identical to the existing operating conditions; therefore, no new induced current would be realized from the GKR Project. The strategies that would be employed to reduce shock hazards and avoid electrocution of workers and the public are presented above in Section 5.9.4.1.12.

### 5.9.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for the Hazards and Hazardous Materials resource area.




## Legend

| | |
|---|---|
| Substation | **Pipelines:** |
| Segment 1 | Natural Gas |
| Segment 2 | Crude Oil Pipelines |
| Segment 3 | Counties |
| Segment 4 | |
| Segment 5 | |

**GORMAN-KERN RIVER 66 kV PROJECT**

**PIPELINES**

ARCADIS | SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL® Company

FIGURE 5.9-1

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-9-1_Pipelines.mxd 10/15/2021

## 5.10 Hydrology and Water Quality

This Section of the PEA describes the existing hydrology and water quality along the GKR Project alignment, as well as the potential impacts and associated with construction and operation of the GKR Project.

### 5.10.1 Environmental Setting

The GKR Project alignment is located in Kern and Los Angeles counties. Segment 1 begins in the Greenhorn Mountains along the Kern River; the Segment then enters the San Joaquin Valley. The entirety of Segment 2 is located in the San Joaquin Valley; Segment 3 lies within the Tehachapi Mountains. Segment 4 is largely located in the Tejon Hills; and Segment 5 is located in the Tehachapi Valley.

Elevation in the GKR Project area ranges from a low of approximately 600 ft amsl to a high of approximately 5,000 ft amsl. Annual and diurnal temperatures vary significantly, with highs typically exceeding 100 degrees Fahrenheit (°F) in the summer to lows of near 30°F in the winter. Average rainfall varies from 10 inches to as much as 14 inches per year.

#### *5.10.1.1 Waterbodies*

Waters of the U.S., including wetlands, occur throughout the GKR Project alignment. Surface drainages identified within the GKR Project alignment include perennial drainages such as the Kern River, intermittent drainages including Caliente Creek, and ephemeral streams. Within the GKR Project alignment, approximately 6.75 acres and approximately 294,030 square feet of potentially jurisdictional non-wetland waters subject to the jurisdiction of the USACE and RWQCBs were identified. The drainages total 22,416 linear feet.

Table 5.10-1 below identifies, by milepost, the named (perennial and intermittent) waterbodies crossed by the GKR Project alignment; these are shown in Figure 5.10-1. Ephemeral waterbodies are cataloged in the Wetlands and Other Waters Jurisdictional Delineation Report contained in Appendix C. The water quality classification, as available, is also presented. The GKR Project alignment also crosses or is proximate to a host of agricultural-related surface waters, including stock ponds, retention basins, and irrigation ditches.

**Table 5.10-1. Waterbodies Crossed by GKR Project Alignment**

| Segment(s) | Project Milepost | Waterbody | Water Quality Classification |
|---|---|---|---|
| 1 | MP 0-1 | Kern River | Not Impaired |
| 1 | MP 5.1 | Cottonwood Creek | Not Impaired |
| 1 | MP 12.8 | Caliente Creek | Not Impaired |
| 1,2,4 | MPs 15.9, 23.1, 57.1 | Arvin Edison Canal | Not Impaired |
| 2 | MP 24.3 | Tejon Creek | Not Impaired |
| 2 | MP 30.2 | El Paso Creek | Not Impaired |
| 2 | MP 37.1 | California Aqueduct | Not Impaired |
| 2 | MPs 42, 44, 44.6, 45.7, 46.2 | Grapevine Creek | Not Impaired |
| 4 | MP 65.3 | Comanche Creek | Not Impaired |
| 5 | MP 67.9 | Chanac Creek | Not Impaired |

#### *5.10.1.2 Water Quality*

The GKR Project alignment is located in areas covered by the Lahontan RWQCB Lahontan Region Basin Plan (RWQCB 1995), the Los Angeles RWQCB Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (RWQCB 2020), and the Central Valley RWQCB Water Quality Control Plan for the Tulare Lake Basin (RWQCB 2018). The Basin Plans identify beneficial uses and water quality objectives that are the water quality standards for each Region. Beneficial uses for drainages located within the GKR Project area are shown below in Table 5.10-2 and identified for each RWQCB.

**Table 5.10-2. Beneficial Uses within the GKR Project Area**

| Feature | MUN | AGR | PRO | IND | GWR | FRSH | NAV | POW | REC-1 | REC-2 | COMM | AQUA | COLD | WARM | SAL | WILD | BIOL | RARE | MIGR | SPWN | WQE | FLD | SHELL | EST | WET | LREC-1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lahontan Region (R6) | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | | | |
| Central Valley (R5) | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | x | x | x | x | x | | | | x | | |
| Los Angeles Region (R4) | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | x | x | x | x | x | | | x | x | x | x |

MUN – Municipal and Domestic Supply
AGR – Agricultural Supply
PRO – Industrial Process Supply
WILD – Wildlife Habitat
IND – Industrial Service Supply
GWR – Ground Water Recharge
FRSH – Freshwater Replenishment
NAV – Navigation
POW Hydropower Generation
REC1 – Water Contact Recreation
REC2 – Non-contact Water Recreation
COMM – Commercial and Sport Fishing
AQUA – Aquaculture
COLD – Cold Freshwater Habitat
WARM – Warm Freshwater Habitat
SAL – Inland Saline Water Habitat
BIOL – Preservation of Biological Habitats of Special Significance
RARE – Rare, Threatened or Endangered Species
MGR – Migration of Aquatic Organisms
SPWN – Spawning, Reproduction, and Development
WQE – Water Quality Enhancement
FLD – Flood Peak Attenuation/Flood Water Storage
X – Existing Beneficial Uses
SHELL- Shellfish harvesting
EST – Estuarine Habitat
WET – Wetland Habitat
LREC-1 Limited Water Contact Recreation

### *5.10.1.3 Impaired Waterbodies Clean Water Act Section 303(d)*

The SWRCB and RWQCBs assess water quality data for California's waters every two years to determine if they contain pollutants at levels that exceed protective water quality criteria and standards. This biennial assessment is required under Section 303(d) of the CWA. In the area along the GKR Project alignment, no waters or waterbodies are listed as a 303(d) impaired water.

### *5.10.1.4 Groundwater Basins*

No USEPA-designated sole source aquifers for drinking water overlie any portion of the GKR Project alignment. Portions of Segments 1, 2, and 4 overlie the Central Valley aquifer system.

Groundwater resources (basins) are delineated by the California Department of Water Resources (DWR). A basin is defined as an alluvial aquifer or a stacked series of alluvial aquifers with reasonably well-defined boundaries in a lateral direction and having a definable bottom. Groundwater in the region is used primarily for agricultural purposes, largely irrigation. The groundwater basins crossed by the GKR Project alignment include the San Joaquin Valley—Kern County, San Joaquin Valley—White Wolf, Castac Lake Valley, and Cummings Valley basins; these are shown in Figure 5.10-2.

The depth to groundwater across the GKR Project alignment varies geographically and temporally. While shallow groundwater may be found near drainages and other features (discussion in Section 5.7, Geology and Soils), the depth to groundwater across the alignment generally exceeds 100 feet. Utilizing DWR well completion reports along the GKR Project alignment as a proxy for depth to groundwater indicates that groundwater levels range considerably, but generally exceeds 100 feet, with some wells drilled to depths of 900 feet or more, and many wells are drilled to depths of 200 to 500 feet (Figure 5.10-3b).

#### 5.10.1.4.1 Groundwater Quality

Groundwater along the GKR Project alignment is used for public and domestic water supply and for irrigation. Summaries of groundwater quality from the DWR's Bulletin 118 (DWR 2020) are provided in the sections below.

*5.10.1.4.1.1 San Joaquin Valley—Kern County and White Wolf*

The eastern subbasin (underlying the GKR Project alignment) contains primarily calcium bicarbonate waters in the shallow zones, increasing in sodium with depth. Bicarbonate is replaced by sulfate and lesser chloride in an east to west trend across the subbasin. The average TDS of groundwater is 400-450 mg/L with a range of 150 – 5,000 mg/L. High TDS, sodium chloride, and sulfate are associated with the axial trough of the subbasin. Elevated arsenic concentrations exist in some areas associated with lakebed deposits. Nitrate, dibromochropropane, and ethylene dibromide concentrations exceed MCLs in various areas of the basin.

*5.10.1.4.1.2 Castac Lake Valley*

Characterization of the basin is not determined. Total dissolved solids (TDS) values range from 570 mg/L to 605 mg/L, with an average value of 583 mg/L. EC values range from 850 µmhos to 880 µmhos, with an average value of 863 µmhos. No groundwater quality impairments are indicated.

*5.10.1.4.1.3 Cummings Valley*

Groundwater in the basin is predominately of the calcium-bicarbonate type. The average EC of groundwater is 530 µmhos/cm with a range of 470-640. The average TDS is 344 mg/L. No groundwater quality impairments are indicated.

### *5.10.1.5 Groundwater Wells and Springs*

Review of the CDFW's Terrestrial Significant Habitats dataset indicates that there are no springs within 150 feet of any GKR Project component (CDFW 2020).

The Public Land Survey System Sections traversed by the GKR Project alignment wherein a water well is located are shown in Figure 5.10-3a; the density of wells within each Public Land Survey System Section is also presented.

### *5.10.1.6 Groundwater Management*

The groundwater resources overlain by the GKR Project alignment are managed by the following Groundwater Sustainability Agencies: Olcese Water District, Kern River, Kern Groundwater Authority, White Wolf, and Castac Basin; the jurisdictional boundaries for each is shown on Figure 5.10-2. Groundwater Sustainability Plans have been developed and implemented for areas under the jurisdiction of the Olcese Water District, Kern River Groundwater Sustainability Agency, Kern Groundwater Authority Groundwater Sustainability Agency, and Castac Basin Groundwater Sustainability Agency. The White Wolf Groundwater Sustainability Agency is developing a Plan.

The Cummings Basin is adjudicated.

Water from the groundwater basins identified in Section 5.10.1.4 above may be used during construction of the GKR Project. Any such water would be obtained by SCE from commercial or municipal purveyors; no groundwater extraction wells would be developed as part of the GKR Project.

## 5.10.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the GKR Project.

### *5.10.2.1 Regulatory Setting*

#### 5.10.2.1.1 Clean Water Act (33 U.S.C. § 1251 et seq.)

Enacted in 1972, the Federal Clean Water Act (CWA; 33 U.S.C. § 1251 et seq.) and subsequent amendments outline the basic protocol for regulating discharges of pollutants to waters of the U.S. It is the primary federal law applicable to water quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. Enforced by the USEPA, it was enacted "… to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The CWA authorizes States to adopt water quality standards and includes programs addressing both point and non-point pollution sources. The CWA also established the NPDES, and provides the USEPA the authority to implement pollution control programs, such as setting wastewater standards for industry and water quality standards for surface waters (see below for a discussion of the NPDES program).

In California, programs and regulatory authority under the CWA have been delegated by USEPA to the SWRCB and its nine RWQCBs. Under Section 402 of the CWA as delegated to the State of California, a discharge of pollutants to navigable waters is prohibited unless the discharge complies with an NPDES permit. The SWRCB and RWQCBs have developed numeric and narrative water quality criteria to protect beneficial uses of state waters and waterways.

*5.10.2.1.1.1 Section 303(d), Impaired Water Bodies and Total Maximum Daily Loads*

Section 303(d) of the CWA requires states to identify waters where adopted water quality standards and beneficial uses are still unattained. These lists of prioritized impaired water bodies, known as the "303(d) lists," are submitted to the USEPA every 2 years.

The law requires the development of Total Maximum Daily Load (TMDL) to improve water quality of impaired water bodies. TMDLs are the quantities of pollutants that can be assimilated by a water body without violating water quality standards. States are developing TMDLs for impaired water bodies to maintain beneficial uses, achieve water quality objectives, and reduce the potential for future water quality degradation A TMDL must account for point and nonpoint sources as well as background (natural) sources and are implemented by allocating the total allowable pollutant loading among dischargers. The EPA defines point source pollution as any contaminant that enters the environment from an easily identified location such as a discharge pipe or drainage ditch. A nonpoint source is where a pollutant has been released into a wide area or when a specific location of a discharge or release of a contaminant cannot be identified.

*5.10.2.1.1.2 Section 404, Placement of Dredge or Fill Material into Waters of the U.S., including Wetlands*

The USACE is responsible for issuing permits under CWA Section 404 for placement of dredge or fill material into waters of the U.S, including wetlands. Waters of the U.S. refers to oceans, bays, rivers, streams (including non-perennial streams with a defined bed and bank), lakes, ponds, and seasonal and perennial wetlands. Project proponents must obtain a permit from the USACE for all discharges of fill or dredged material before proceeding with a proposed activity. The USACE may issue either an individual permit or a general permit.

*5.10.2.1.1.3  Section 401, Water Quality Certification*

Section 401 of the CWA specifies that the SWRCB or applicable RWQCB must certify that any federal action meets with state water quality standards, (23 CCR § 3830, et seq.). Under California's policy of no net loss of wetlands, the SWRCB and RWQCBs require mitigation for dredge and fill impacts to wetlands and waterways (see Section 5.4, Biological Resources). Dredge and fill activities in wetlands and waterways that impact waters of the U.S. will require a CWA Section 404 permit from the USACE. These permits trigger the requirement to obtain a Section 401 certification, which must be obtained prior to issuance of a Section 404 permit.

*5.10.2.1.1.4  Section 402, National Pollution Discharge Elimination System*

The SWRCB and the RWQCBs implement and enforce the NPDES program in California. Issued in 1972, the NPDES regulations initially focused on municipal and industrial wastewater discharges, followed by storm water discharge regulations, which became effective in December 1990. NPDES permits provide two levels of control: technology-based limits and water quality-based limits. Technology-based limits are based on the ability of dischargers to treat wastewater, while water quality-based limits are required if technology-based limits are not sufficient to protect the water body. Additionally, storm water permitting for construction site discharges is described below under state Regulations.

Dischargers with water quality-based effluent limitations must achieve water quality standards in the receiving water. Published by the USEPA on May 18, 2000, the California Toxics Rule (CTR) largely reflects the water quality criteria contained in the USEPA's Section 304(a) Gold Book (USEPA 1986) and the later National Recommended Water Quality Criteria (USEPA 2006). With promulgation of the CTR, these federal criteria are legally applicable in California to inland surface waters, enclosed bays, and estuaries for all purposes and programs under the CWA. NPDES permits must also incorporate TMDL waste load allocations when they are developed.

#### 5.10.2.1.2 Porter-Cologne Water Quality Act (California Water Code § 13000 et seq.)

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) requires protection of water quality by appropriate designing, sizing, and construction of erosion and sediment controls. The Porter-Cologne Act established the SWRCB and divided California into nine regions, each overseen by a RWQCB. The SWRCB is the primary state agency responsible for protecting the quality of the state's surface and groundwater supplies and has delegated primary implementation authority to the nine RWQCBs. The Porter-Cologne Act assigns responsibility to the SWRCB and the nine RWQCBs for implementing CWA, including Sections 401 through 402 (see above).

The nine RWQCBs also implement CWA Section 303(d). Under Section 303(d), the RWQCBs identify streams and waters that have "Water Quality Limited Segments," or portions that do not meet water quality standards even after point sources of pollution have installed the minimum required levels of pollution control technology. Pursuant to the CWA, the SWRCB establishes priority rankings for water on the lists and develops total maximum daily load criteria (i.e., the maximum quantity of a particular contaminant that a water body can assimilate without experiencing adverse effects) to improve water quality.

Under the Porter-Cologne Act and the NPDES, the SWRCB administers California's storm water permitting program. This program requires all projects that will disturb more than one acre of land to implement storm water BMPs to prevent discharge of sediments and storm water. The permit (General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order 2009-0009-DWQ as amended by Order 2010-0014-DWQ and 2012-0006-DWQ) requires preparation of a SWPPP and implementation of BMPs, storm water sampling, and reporting.

The SWRCB and the RWQCBs are responsible for addressing dredge and fill impacts to wetlands and waterways in California to support the State goal of no net loss of wetlands. The SWRCB and the RWQCBs are responsible for the issuance of Section 401 water quality certifications for federal actions that result in dredge and fill activities in federally jurisdictional wetlands and waterways. Dredge and fill activities in non-federally jurisdictional wetlands and waterways must be covered under a waste discharge requirement (WDR) issued by the SWRCB or applicable RWQCB.

In April 2019, the SWRCB issued the State Wetland Definition and Procedures for Discharges for Dredged or Fill Materials to Waters of the State (Procedures). The Procedures became effective on May 28, 2020 but were challenged in California Superior Court. The Court found that the Board overreached their authority in implementing the Procedures related to non-federal waters of the State by not identifying the correct policy for which their authority resides. The Court found that the SWRCB has the authority to regulate all waters of the State, even non-federal waters but is currently prohibited from requiring the Procedures for waters of the State that are not waters of the U.S. until changes to the policy are made. Currently, the SWRCB has issued a public notice to clarify their authority so that the Procedures will include waters not identified as waters regulated under federal CWA. It is anticipated that the Board will adjust their policy and implementation of the Procedures to include non-federal waters of the State.

The Porter-Cologne Act requires the development and periodic review of water quality control plans (Basin Plans) that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters, provide the technical basis for determining waste discharge requirements, identify enforcement actions, and evaluate clean water grant proposals. The Basin Plans are updated every three years.

#### 5.10.2.1.3 Lahontan Region Basin Plan

The GKR Project alignment falls partially within the jurisdiction of the Lahontan Regional Water Quality Control Board. The water quality objectives for the Lahontan Region include measures to reduce the potential for contaminants. The Lahontan Region Basin Plan lists restrictions on waste discharges and sediment and erosion control requirements. The Lahontan Region Basin Plan identifies the majority of issues related to water quality within the Region are a result of non-point sources. The allocation of waters within the Region to areas outside the Region are also identified. Because of the size of the Region, careful consideration between water quality and water quantity is a primary goal in the planning process for the Region.

#### 5.10.2.1.4 Los Angeles Region Basin Plan

The Los Angeles Region Basin Plan is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Specifically, the Los Angeles Region Basin Plan designates beneficial uses for surface and ground waters, sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy, and describes implementation programs to protect all waters in the Region. In addition, the Los Angeles Region Basin Plan incorporates (by reference) all applicable State and Regional Board plans and policies and other pertinent water quality policies and regulations. Those of other agencies are referenced in appropriate sections throughout the Los Angeles Region Basin Plan.

#### 5.10.2.1.5 Water Quality Control Plan for the Tulare Lake Basin

Water quality in streams and aquifers of the region is regulated by the Central Valley RWQCB Tulare Lake Basin Plan. State policy for water quality control is directed at achieving the highest water quality consistent with the maximum benefit to the people of the state. To develop water quality standards consistent with the uses of a water body, the Central Valley RWQCB classifies historical, present, and potential future beneficial uses as part of its basin plan. The Central Valley RWQCB's Basin Plan identifies the beneficial uses of the Tulare Lake Basin. A detailed discussion of beneficial uses and water quality objectives can be found in the Tulare Lake Basin Plan. The Central Valley RWQCB's Basin Plan has also established the water quality objectives for dissolved oxygen in various habitats.

#### 5.10.2.1.6 California Fish and Game Code § 1600-1617

California Fish and Game Code Section 1600 et seq. sets forth guidelines for the protection and conservation of fish and wildlife, including habitat. The law requires any person, state or local governmental agency, or public utility to notify CDFW before beginning an activity that would substantially modify the bank or bed of a river, stream, or lake (i.e., prior to causing any potential hydrological impacts).. Refer to Section 5.4, Biological Resources, for additional information.

### *5.10.2.2 Local*

The CPUC has sole and exclusive state jurisdiction over the siting and design of the GKR Project. Pursuant to GO 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the GKR Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

#### 5.10.2.2.1 Kern County General Plan

The Kern County General Plan Safety Element addresses watersheds, flooding, mudslides, and other hydrology-related topics. It does not contain any specific goals or policies that are relevant to the GKR Project.

#### 5.10.2.2.2 Los Angeles County General Plan

The Los Angeles County General Plan Conservation and Natural Resources Element addresses surface water, ground water, and watershed protection; none of the policies associated with these topics are relevant to the GKR Project.

The Los Angeles County General Plan Safety Element addresses flood and inundation hazards; none of the policies associated with this topic are relevant to the GKR Project.

#### 5.10.2.2.3 City of Arvin General Plan

The City of Arvin's General Plan Conservation and Open Space Element addresses groundwater quality and flood control, among other topics. None of the goals or policies contained in this Element are relevant to the GKR Project. The Implementation Plan associated with the General Plan contains nine Focus Areas; Focus Area 5—Resource Management: Water, contains seven Actions; none are relevant to the GKR Project.

#### 5.10.2.2.4 City of Bakersfield General Plan

The Conservation Element of the General Plan addresses water resources, and the Safety Element addresses flood control. The Conservation Element contains Issues, Goals and Policies related to the conservation and effective utilization of water resources, water deficiencies, water quality, and competing uses of water; none are relevant to the GKR Project. The Safety Element contains Issues, Goals, and Policies related to flood protection and loss minimization; none are relevant to the GKR Project.

#### 5.10.2.2.5 Kern River Groundwater Sustainability Agency

The Kern River Groundwater Sustainability Agency Groundwater Sustainability Plan defines five Sustainability Indicators: Chronic Lowering of Water Levels; Reduction of Groundwater in Storage; Degraded Water Quality; Inelastic Land Subsidence; and Depletion of Interconnected Surface Water. The Plan also establishes the Sustainability Indicator and Minimum Threshold for triggering of an Undesirable Result related to these Sustainability Indicators as a water level "50' below Historic Low WL" for wells in the East Niles Community Service District wellfield.

#### 5.10.2.2.6 Kern Groundwater Authority Groundwater Sustainability Plan

The Kern Groundwater Authority Groundwater Sustainability Plan defines four sustainability goals:

- Achieve sustainable groundwater management in the Kern County Subbasin through the implementation of projects and management actions at the member agency level of each GSA.
- Maintain its groundwater use within the sustainable yield of the basin as demonstrated by monitoring and reporting groundwater conditions.
- Operate within the established sustainable management criteria, which are based on the collective technical information presented in the GSPs [Groundwater Sustainability Plans] in the Subbasin.
- Collectively bring the Subbasin into sustainability and to maintain sustainability over the implementation and planning horizon.

The Plan also defines measurable objectives and minimum thresholds that, if exceeded, would trigger an Undesirable Result. The measurable objectives and minimum thresholds are identified by subbasin within the Plan area.

#### 5.10.2.2.7 Olcese Groundwater Sustainability Agency

The Olcese Groundwater Sustainability Agency Groundwater Sustainability Plan defines two 'Undesirable Results' for the Olcese GSA Area: Chronic Lowering of Groundwater Levels and Reduction of Groundwater Storage. The Plan notes that

> "[p]otential causes of Undesirable Results due to Chronic Lowering of Groundwater Levels in the Olcese GSA Area include increased pumping and/or reduced recharge. Because the primary use of groundwater from the principal aquifer in the Olcese GSA Area (the Olcese Sand Aquifer Unit) is for agricultural purposes, increased pumping from the Olcese Sand Aquifer Unit could occur if new land is put into agricultural production or if water use per acre on existing irrigated land increases."

The Plan further notes that

> "[r]eduction of Groundwater Storage is generally correlated to Chronic Lowering of Groundwater Levels. Therefore, the potential causes of Undesirable Results due to Reduction in Groundwater Storage are generally the same as the potential causes listed above for Undesirable Results due to Chronic Lowering of Groundwater Levels (i.e., increased groundwater pumping and reduced recharge)."

## 5.10.3 Impact Questions

### *5.10.3.1 Impact Questions*

The significance criteria for assessing the impacts to hydrology and water quality come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on site or off site; substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows?
- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

### *5.10.3.2 Additional CEQA Impact Questions*

There are no CPUC-identified additional CEQA impact questions.

## 5.10.4 Impact Analysis

### *5.10.4.1 Impact Analysis*

#### 5.10.4.1.1 Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

*5.10.4.1.1.1 Construction*

**Less than Significant Impact.** Construction of the GKR Project would require ground-disturbing activities that could increase soil erosion rates, potentially resulting in violating water quality standards and impacts to beneficial uses in adjacent water bodies. The GKR Project crosses erosion-prone areas and areas with potential for sedimentation. To minimize soil erosion and resulting impacts on water quality, SCE would comply with state storm water regulations and the terms of ministerial grading permits from county jurisdictions (if such permits are necessary). No waste discharge requirements are anticipated to be required for the GKR Project. SCE would apply for coverage under a General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order 2009-0009-DWQ as amended by Order 2010-0014-DWQ and 2012-0006-DWQ. This general permit requires submittal of a Notice of Intent, preparation of project-specific SWPPPs and implementation of site-specific BMPs to address material management, non-storm water discharge, sediment discharge, and erosion control to meet water quality standards. Site-specific BMPs would be developed to prevent storm water discharges during construction and could include, but are not limited to: installation of silt fencing, straw wattles, retention basins, sediment stabilization, and good site housekeeping.

Construction of the GKR Project would not contribute to the degradation of water quality within a 303(d) listed waterbody, as the GKR Project alignment does not cross a 303(d) listed waterbody.

Materials used during construction (e.g., diesel fuel, hydraulic fluid, oils, grease, and concrete) have the potential to be transported by storm water runoff and threaten aquatic life. These materials could violate water quality standards if they come in contact with storm water and/or are transported to nearby water resources or a municipal separate storm sewer system. The general handling, storage, and disposal of potentially hazardous materials are discussed in Section 5.9, Hazards and Hazardous Materials, and specific measures to manage hazardous materials would be addressed in the SWPPPs. These would ensure less than significant impacts. Further, SCE would implement additional measures contained in APMs HAZ-1 and WET-1 (see Section 3.11).

Wastewater would be generated by construction workers during construction of the GKR Project. However, the wastewater generated during the construction period would be contained within portable restrooms and disposed of by a licensed contractor. No wastewater would be discharged from the site.

Potential water quality impacts during construction within jurisdictional drainages would be minimized through compliance with the conditions set forth in the federal or state permits and agreements, and coordination with the resource agencies. Work within CWA wetlands and other waters may require a CWA Section 404 permit from the USACE for the placement of dredge or fill material in federally jurisdictional waters of the U.S. As such, SCE would also be required to obtain a Section 401 water quality certification from the SWRCB or applicable RWQCBs and comply with conditions of approval. Work within streams or drainages may require a 1602 Lake or Streambed Alteration Agreement from CDFW. Obtaining permits for dredge and fill activities and compliance with the terms and conditions in these authorizations would ensure that these activities would not violate any water quality standards and would not otherwise substantially degrade surface or groundwater quality.

Earth moving activities including vegetation removal, and rehabilitation of existing access roads have the potential to create storm water runoff during rain events and violate water quality standards. With the implementation of site-specific BMPs required under the state construction storm water permit and compliance with terms and conditions of other required permits (including ministerial grading permits), the GKR Project would not violate water quality standards or applicable waste discharge requirements associated with construction activities.

With implementation of the GKR Project-specific BMPs provided in the SWPPPs and compliance with federal and state law, the GKR Project would not violate any water quality standards or waste discharge requirements, and would not otherwise substantially degrade surface or ground water quality, and impacts would be less than significant.

*5.10.4.1.1.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts would be realized under this criterion during operations and maintenance.

#### 5.10.4.1.2 Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?

*5.10.4.1.2.1 Construction*

**Less than Significant Impact.** During earth-disturbing activities, water would be used to control dust and stabilize unvegetated areas. Water for dust control would be obtained from existing surface water- and groundwater-fed supplies. It is estimated that on the order of 350 acre-feet of water may be used over the construction period; this is a conservative estimate, and actual water consumption would be substantially less due to refinements in construction scheduling during final engineering.

The consumptive use of an estimated 350 acre-feet over the two-year construction period would not substantially deplete groundwater supplies: the Kern Subbasin groundwater sustainability agency-level water budget identifies a total groundwater supply of 1.96 million acre-feet per year (Kern Groundwater Authority 2020). The GKR Project's approximate 175 acre-feet of annual water consumption represents approximately 0.009 percent of the annual groundwater supply, and thus would not substantially decrease groundwater supplies. Further, the short-term withdrawals of groundwater for the GKR Project would not impede the inherently long-term sustainable management of the basin.

During installation of poles and underground facilities, shallow groundwater may be encountered. In these instances, excavations would be dewatered and either discharged on-site to land or stored in Baker tanks or similar equipment prior to disposal off-site. This water may also supplement other water supplies for dust control. Groundwater dewatered from excavations and discharged to land or used for dust control would infiltrate into the existing groundwater system; during this process some groundwater would be lost to evapotranspiration, but this loss would be minor and would not substantially deplete groundwater supplies.

The GKR Project would result in a decrease in the number of subtransmission structures across the GKR Project alignment. This would result in a net reduction of impervious surface in the GKR Project area, and therefore the GKR Project would not impede groundwater recharge or restrict infiltration to the groundwater table.

Because of the relatively small volume of groundwater that would be used during construction when compared to the existing groundwater supplies in the area; the limited volumes of dewatering waters; and the reduction of the amount of impervious surface in the GKR Project area, the GKR Project would not impede groundwater recharge or restrict infiltration to the groundwater table, and construction-related impacts would be less than significant.

*5.10.4.1.2.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts would be realized under this criterion during operations and maintenance.

#### 5.10.4.1.3 Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?

*5.10.4.1.3.1 Construction*

**Less than Significant Impact.** The GKR Project alignment crosses several perennial, ephemeral, and intermittent drainages; the GKR Project would not alter the course of any drainage.

The GKR Project involves vegetation removal and grading associated with the rehabilitation of existing access and spur roads and the establishment of structure installation and removal sites, pull sites, and other construction work areas; the installation of replacement subtransmission poles; and the establishment and use of staging areas. Many of the existing access and spur roads cross ephemeral or intermittent drainages, or are located in areas that are prone to erosion and sedimentation. Rehabilitation of these existing access and spur roads may result in very small localized changes to the existing drainage patterns. The GKR Project would result in a decrease in the number of subtransmission structures across the GKR Project alignment; this small decrease in impervious surfaces would not result in a change in the drainage patterns that could result in erosion, siltation and sedimentation on or off-site.

Removal of existing subtransmission structures may cause minor changes in existing drainage patterns. Where poles would be removed, final grading and contouring would return the removal areas to pre-project conditions to the extent feasible. Site-specific SWPPPs would be prepared that would identify BMPs to reduce runoff which would minimize the potential for erosion, siltation and sedimentation that could alter drainage patterns.

Work within drainages would be avoided to the extent feasible. However, where work within drainages is required, SCE would implement measures contained in APM WET-1 (see Section 3.11), including the implementation of appropriate site-specific BMPs (e.g., silt fencing and straw wattles) to reduce the risk of an unintended release of sediments or other materials into jurisdictional waters. Where required, permits per CWA Sections 404 and 401, the Porter Cologne Act, and CDFW 1602 LSAA would be obtained and all conditions of approval would be implemented including, but not limited to, returning all drainage features temporarily impacted during construction to pre-project conditions. Therefore, impacts would be less than significant during construction under this criterion.

*5.10.4.1.3.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts would be realized under this criterion during operations and maintenance.

#### 5.10.4.1.4 Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

*5.10.4.1.4.1 Construction*

**Less than Significant Impact.** As described above, work associated with the GKR Project would result in a minor decrease in impervious surface compared with existing conditions, and vegetation removal and grading would result in minor changes to drainage patterns. However, the overall drainage patterns would remain unchanged and the GKR Project would not alter the course of a stream or river. The GKR Project's SWPPPs would include measures to control storm water runoff which would minimize the potential for significant alteration of drainage patterns that would result in flooding on-site or off-site. Improvements to existing access roads and spur roads would include design considerations to maintain or improve drainage patterns, where feasible. Through drainage design and SWPPP implementation, the GKR Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition decrease of impervious surfaces which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site, and thus impacts would be less than significant.

##### *5.10.4.1.4.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts would be realized under this criterion during operations and maintenance.

#### 5.10.4.1.5 Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

##### *5.10.4.1.5.1 Construction*

**Less than Significant Impact.** The GKR Project alignment crosses perennial, intermittent, and ephemeral watercourses but the courses of these would not be substantially altered. Temporary impacts on stream channels could occur during construction but these features would be returned to pre-project topography and grade and no permanent drainage patterns would occur. As previously described, the GKR Project would not substantially increase the area of impervious surfaces that could result in a substantial increase in runoff. Grading of construction work areas, rehabilitation of access roads and spur roads, and construction of TSP foundations could contribute to minor increases of polluted runoff during construction. Where appropriate, areas temporarily disturbed will be revegetated. These activities would be temporary, and impacts would be reduced by the implementation of site-specific BMPs identified in the SWPPPs. Because GKR Project activities would not substantially increase polluted runoff, impacts would be less than significant.

##### *5.10.4.1.5.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts would be realized under this criterion during operations and maintenance.

#### 5.10.4.1.6 Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?

*5.10.4.1.6.1 Construction*

**Less than Significant Impact.** The placement of subtransmission structures within waterways has been avoided to the extent feasible, However, some replacement subtransmission structures to be installed under the GKR Project would be placed within drainages, including in floodplains. These structures would have a small footprint and cross-section within the floodplain that would not significantly impede or redirect flood flows. Further, some existing structures installed within drainages, including in floodplains, would be removed. Because these structures have a small cross-sections and footprint within the floodplain, their removal would not redirect flood flows. If flooding is threatened during the construction period, equipment and personnel would be removed from floodplain areas. Therefore, any impacts would be less than significant.

*5.10.4.1.6.2 Operations*

**No Impact.** Operation and maintenance activities, that exist today, would not change as a result of the GKR Project. Any additional structures or facilities installed during the operations phase of the GKR Project would be analogous to those installed during the Construction phase, and as such would not alter drainage patterns or impede or redirect flood flows. Therefore, no impacts would occur during operation of the GKR Project under this criterion.

#### 5.10.4.1.7 Would the Project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

*5.10.4.1.7.1 Construction*

**Less than Significant Impact.** The GKR Project alignment is not located within a tsunami zone and there are no large bodies of water that could result in a seiche within the vicinity of the alignment. Approximately 16 miles of the GKR Project alignment is located in floodplains; these areas could be inundated during flooding. In the unlikely event of flooding or threatened flooding, construction crews would evacuate in accordance to established evacuation plans and routes. Therefore, construction equipment and materials would not be subject to inundation, and there would be less than significant impacts under this criterion.

*5.10.4.1.7.2 Operations*

**Less than Significant Impact.** The GKR Project alignment is not located in a tsunami or seiche zone. Approximately 16 miles of the GKR Project alignment is located in floodplains; these areas could be inundated during flooding. In the unlikely event of flooding or threatened flooding, O&M crews (if in this area at the time) would evacuate and remove all O&M related equipment and materials in accordance with established evacuation plans and routes. The four poles to be installed in this flood area do not contain any potential pollutants. Therefore, less than significant impacts would be realized under this criterion.

#### 5.10.4.1.8 Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

*5.10.4.1.8.1 Construction*

**No Impact.** As stated above, construction of the GKR Project would require that SCE obtain a CWA Section 401 water quality certification from either the SWRCB or applicable RWQCBs. Receipt of this certification and compliance with any conditions of approval would ensure that the GKR Project does not conflict with any of the applicable Water Quality Control Plans.

Groundwater Sustainability Plans have been developed and implemented for areas under the jurisdiction of the Olcese Water District, Kern River Groundwater Sustainability Agency, and Kern Groundwater Authority Groundwater Sustainability Agency. The California Department of Water Resources has developed regulations which define six "Sustainability Indicators." These indicators must be avoided for a groundwater basin to be considered sustainable:

- Significant and unreasonable reductions in groundwater levels
- Significant and unreasonable reductions in groundwater storage
- Significant and unreasonable land subsidence
- Significant and unreasonable reductions in groundwater quality
- Significant and unreasonable reductions in groundwater-surface water interaction
- Significant and unreasonable seawater intrusion

The GKR Project's small-volume, short-duration use of water during construction would not result in the chronic lowering of groundwater levels, in the reduction of groundwater storage, in land subsidence, in the degradation of water quality, in the depletion of interconnected surface water, or in any seawater intrusion. Therefore, the GKR Project would not conflict with or obstruct implementation of the sustainable groundwater management plans, and no impacts would be realized under this criterion.

*5.10.4.1.8.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts would be realized under this criterion during operations and maintenance.

### *5.10.4.2 Hydrostatic Testing*

Hydrostatic testing is not included under the GKR Project.

### *5.10.4.3 Water Quality Impacts*

Impacts to surface water quality are addressed in the discussions in Section 5.10.4.1 above.

### *5.10.4.4 Impermeable Surfaces*

A description of increased run-off and potential impacts on groundwater recharge due to construction of impermeable surfaces is provided in the discussions in Section 5.10.4.1. The acreage of new impermeable surfaces that will be created as a result of the project is approximately 0.08 acres.[18]

### *5.10.4.5 Waterbody Crossings*

The waterbodies to be crossed under the GKR Project are addressed in Section 5.10.1.1. Along the existing access road network, these waterbodies, where crossed, are and will be crossed at-grade. The

---

18 Impermeable acreage calculated to be the footprint of the subtransmission poles to be installed under the GKR Project; largest diameter for each type as presented in Table 3.3-2 used in calculation.

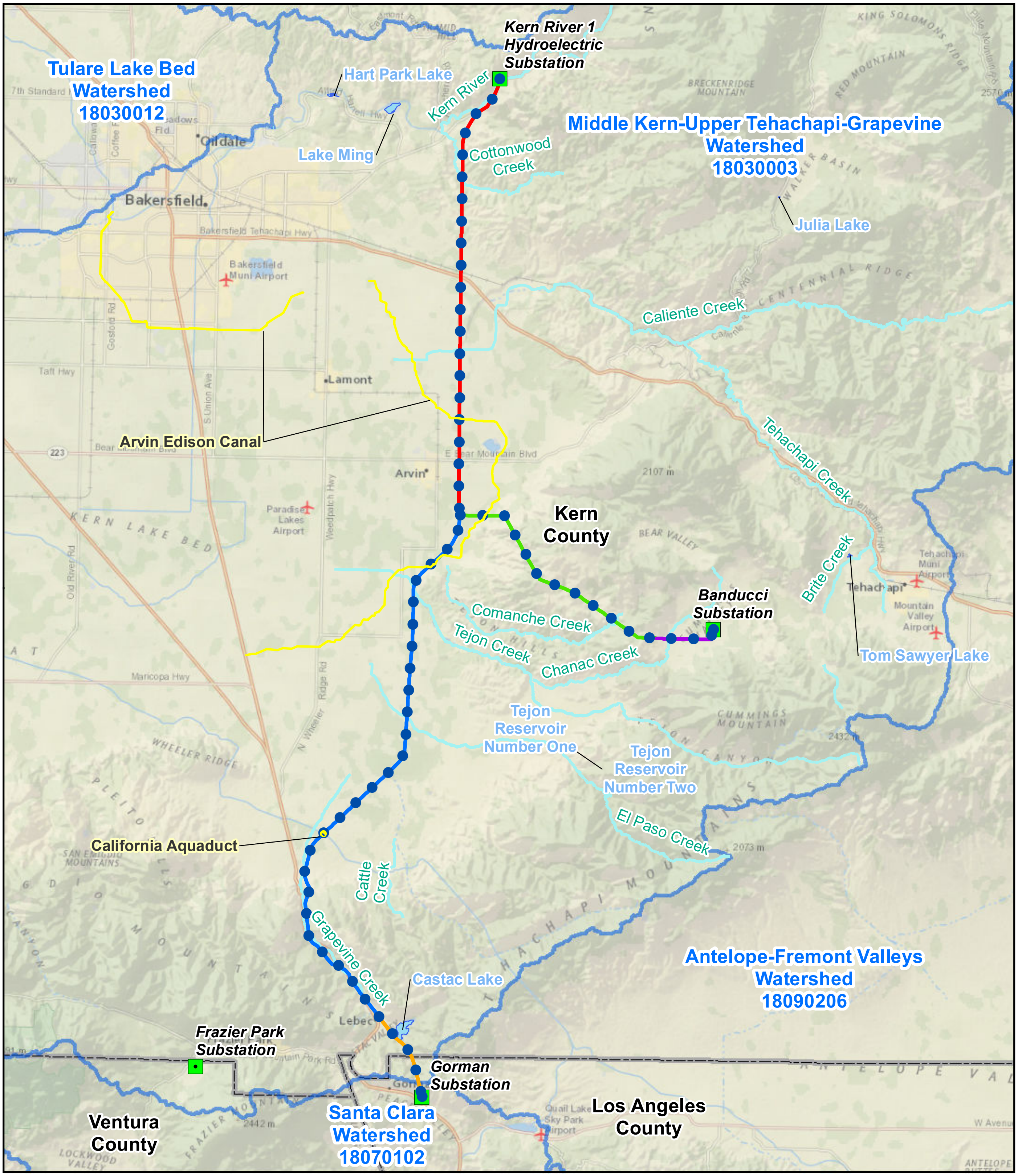
waterbodies cannot be avoided. No additional work areas or staging areas will be required at waterbody or wetland crossings. No dewatering or water diversions will be required during construction. The restoration methods to be employed in the areas near waterbody crossings are addressed in Section 5.4.

#### *5.10.4.6 Groundwater Impacts*

The GKR Project's consistency with applicable sustainable groundwater management plans is presented in Section 5.10.4.1.8.

### 5.10.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for the Hydrology and Water Quality resource area.




## Legend

| | | | |
|---|---|---|---|
| ■ | Substation | ● | Mile Posts |
| — | Segment 1 | — | NHD Flowline |
| — | Segment 2 | — | Canals and Aqueducts |
| — | Segment 3 | ▭ | Watersheds-HUC08 |
| — | Segment 4 | ▭ | NHD Waterbody |
| — | Segment 5 | ▭ | Counties |

N

0 6 12
Miles

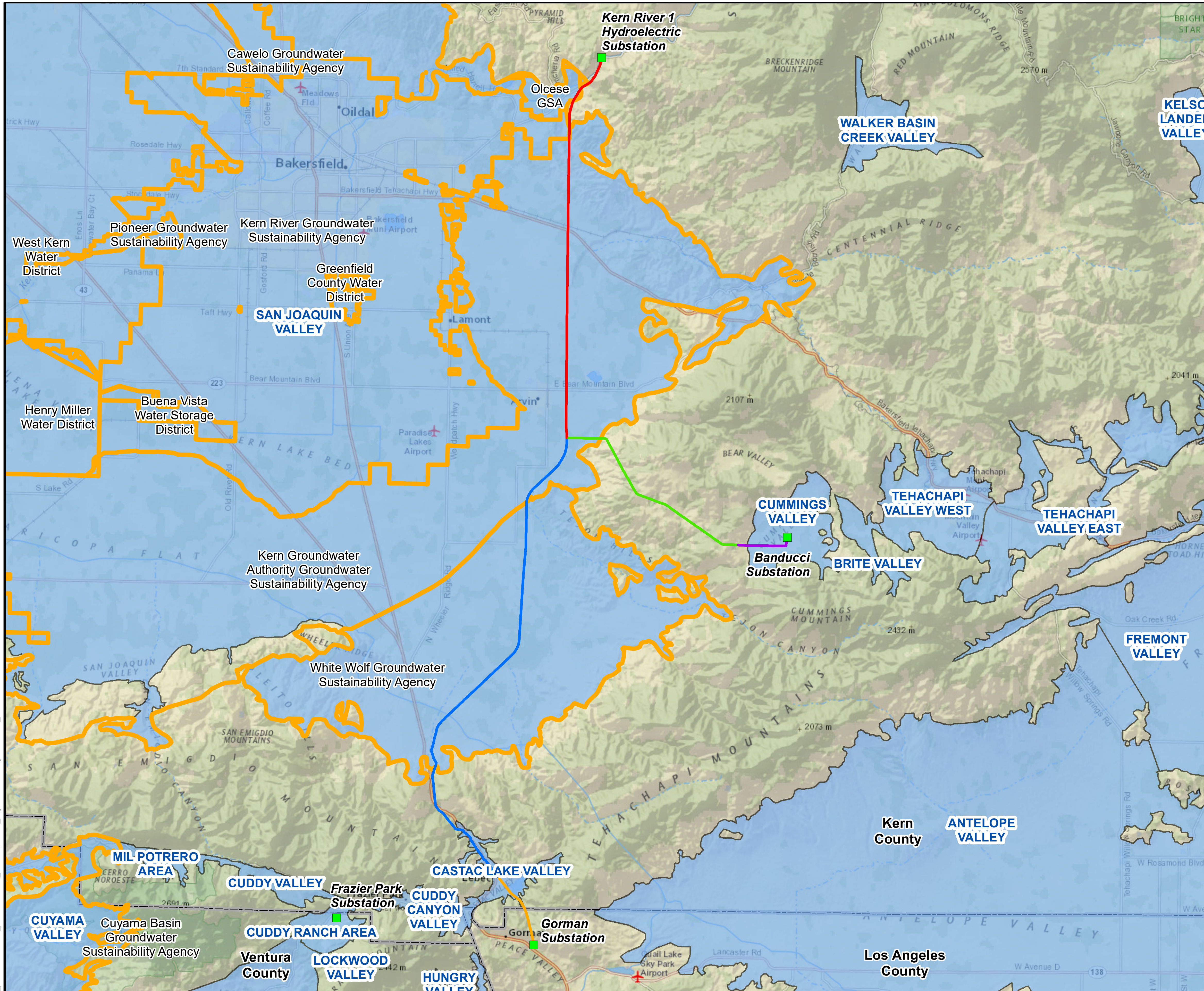
**GORMAN-KERN RIVER 66 kV PROJECT**

**PERENNIAL, INTERMITTENT, AND EPHEMERAL WATERBODIES**

ARCADIS SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL® Company

FIGURE 5.10-1

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-10-1_PerenialIntermittentEphemeralWaterbodies.mxd 10/25/2021




SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

N

Legend:

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Groundwater Sustainability Agencies
- Groundwater Basins
- Counties

0 6.5 13
Miles

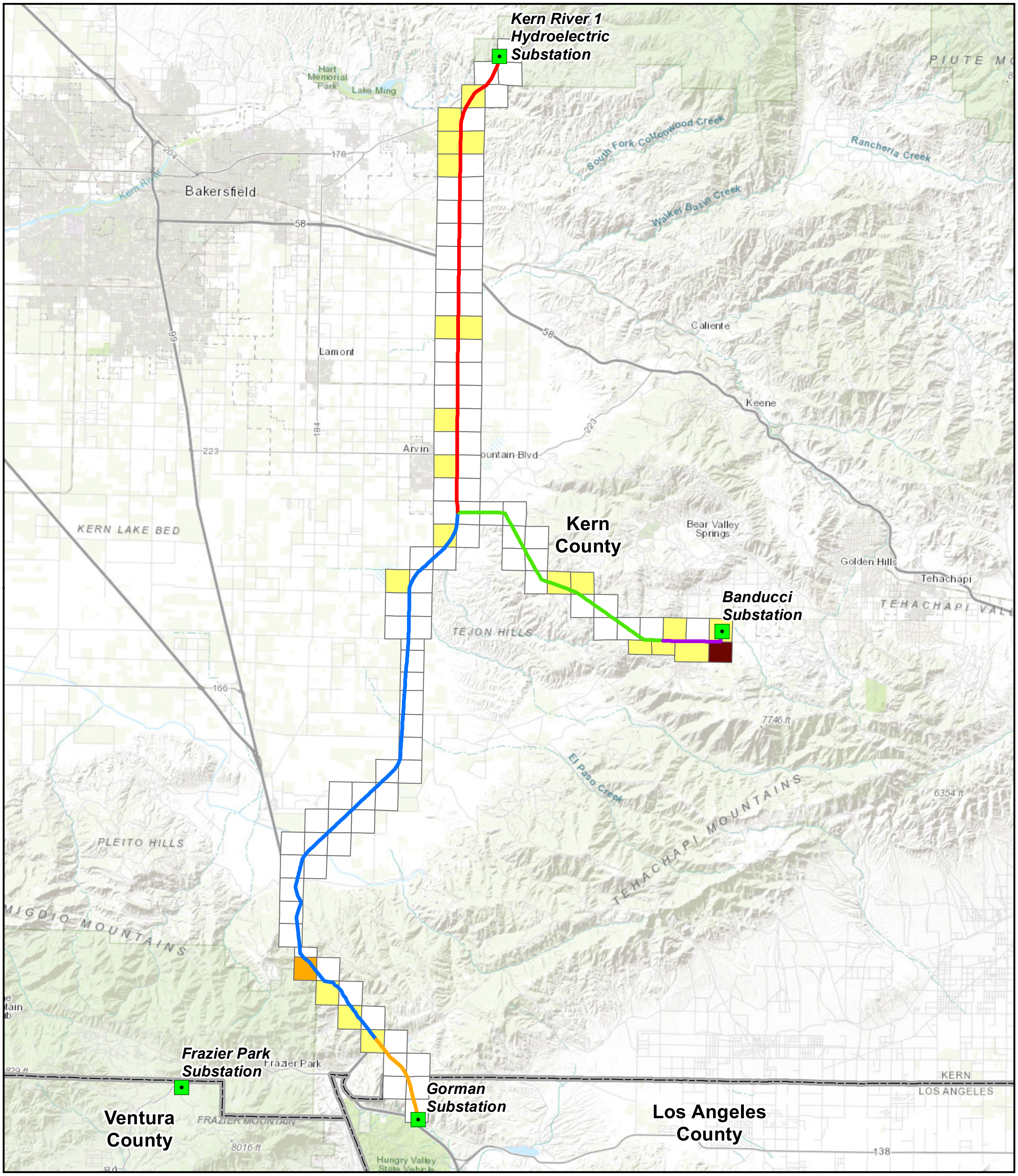
**GORMAN-KERN RIVER 66 kV PROJECT**

**GROUNDWATER BASINS AND AQUIFERS**

ARCADIS

FIGURE 5.10-2

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-10-3_Groundwater Basins.mxd 06/15/2021 7:22:18 PM




## Legend

- Substation
- Counties
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5

**Domestic Well Count**

- 0
- 1 - 5
- >5 - 10
- >10 - 15

N

0 6 12
Miles

**GORMAN-KERN RIVER 66 kV PROJECT**

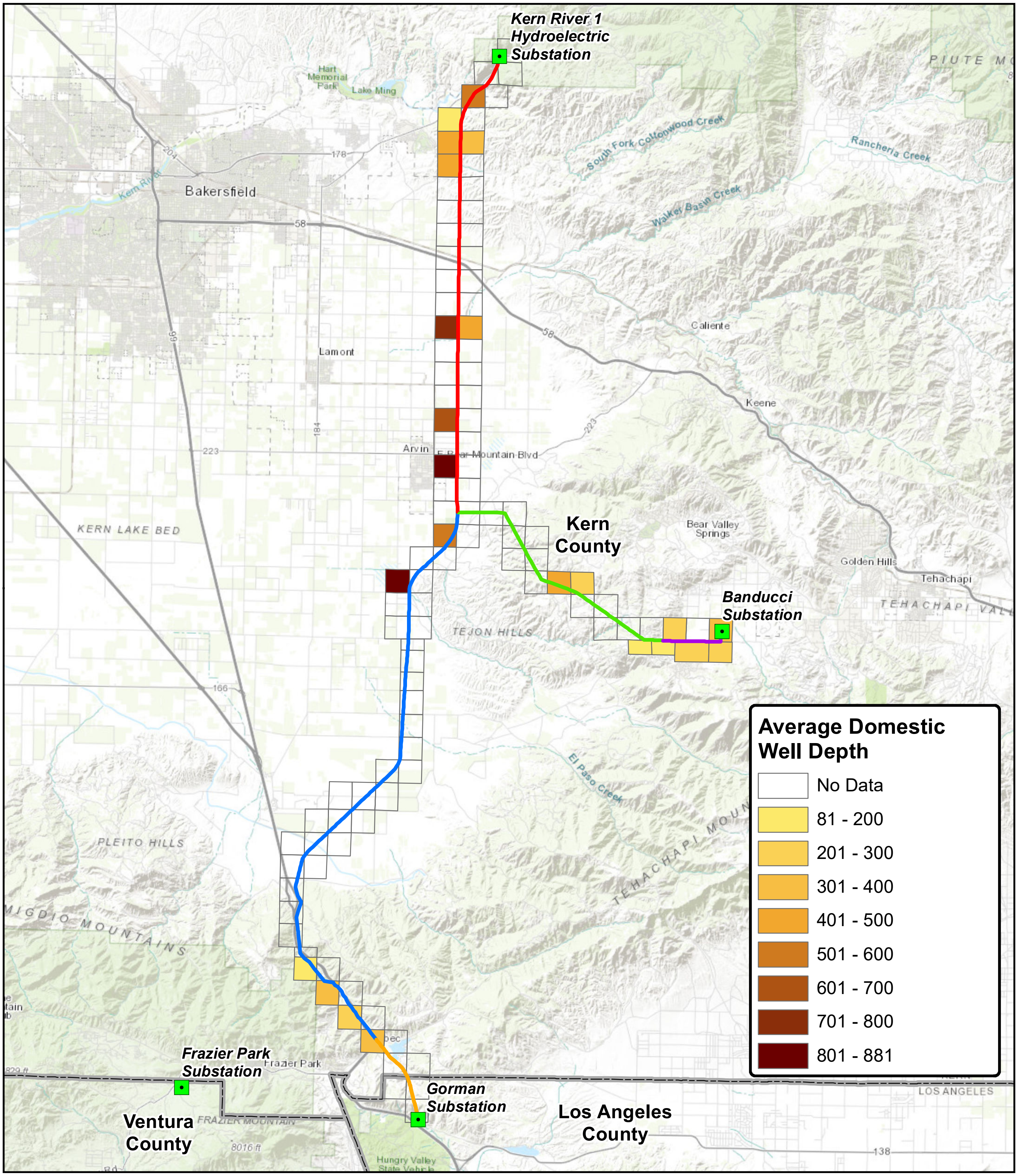
**GROUNDWATER WELLS - DOMESTIC WELL COUNT PER SECTION**

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE
**5.10-3a**

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-10-4a_Groundwater Wells-Domestic Well Count.mxd 06/15/2021




## Legend

- Substation
- Counties
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5

N

0 6 12

Miles

**GORMAN-KERN RIVER 66 kV PROJECT**

**GROUNDWATER WELLS - DOMESTIC WELL DEPTH PER SECTION**

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE
**5.10-3b**

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-10-4b_Groundwater Wells-Domestic Well Depth.mxd 06/15/2021

## 5.11 Land Use and Planning

This Section of the PEA discusses the existing land use within the vicinity of the GKR Project and the potential impacts to existing land use as a result of construction and operation of the GKR Project. For purposes of this section, Project Area is defined as the locations where work described in Chapter 3—Project Description would be performed. Figureset 5.11-1 and Figureset 5.11-2 show the designated land use and zoning in the area of the GKR Project.

### 5.11.1 Environmental Setting

#### *5.11.1.1 Land Use*

The existing land use along the GKR Project alignment is primarily open space and agriculture, with scattered rural residential and suburbanized areas. That portion of the GKR Project alignment located in unincorporated Los Angeles County is characterized as open space with a single rural residence. The GKR Project alignment is located near or in the following communities:

- Segment 1, Kern County: City of Bakersfield and City of Arvin
- Segments 2 and 3, Kern County: Lebec Census Designated Place
- Segments 4 and 5, Kern County: Stallion Springs Census Designated Place

The existing subtransmission lines included under the GKR Project are located in and adjacent to these communities and adjacent to scattered rural residences outside of communities.

Agricultural land uses predominate along Segments 1, 2, 4, and 5. Commercial land uses proximate to the GKR Project alignment are largely confined to the City of Arvin in Segment 1 and in the Grapevine area in Segment 2. Industrial uses, including hydrocarbon production and transportation infrastructure, are found along Segment 2.

The large majority of the GKR Project alignment is located on private lands; federal lands are found in Segment 1 (SNF) and in Segment 2 (LPNF).

#### *5.11.1.2 Special Land Uses*

##### 5.11.1.2.1 Lands Administered by Federal, State, or Local Agencies, or Private Conservation Organizations

*5.11.1.2.1.1 Sequoia National Forest*

The northern terminus of Segment 1 is located on lands that are part of the SNF. These lands are designated as part of the Lower Kern River Place.

*5.11.1.2.1.2 Los Padres National Forest*

Approximately 450 feet of Segment 2 is located in the LPNF, north of Fort Tejon State Historic Park. These lands are included in the north-eastern corner of the Mt. Pinos Place.

*5.11.1.2.1.3 State Land Use Designations*

The GKR Project alignment does not cross state lands with a special land use designation.

*5.11.1.2.1.4 Local Land Use Designations*

The GKR Project alignment does not cross local government lands with a special land use designation.

##### *5.11.1.2.1.5 Private Conservation Organizations*

Portions of Segment 2, 3, and 4 are located on lands identified as 'Conservation Areas' in the Tejon Ranch Conservation and Land Use Agreement.

#### 5.11.1.2.2 Designated Coastal Zone Management Areas

No portion of the GKR Project alignment is located in a designated coastal zone management area.

#### 5.11.1.2.3 Designated or Proposed Candidate National or State Wild and Scenic Rivers

No portion of the GKR Project alignment crosses or is located proximate to a designated or proposed candidate National or State Wild and Scenic River.

#### 5.11.1.2.4 National Landmarks

No portion of the GKR Project alignment is located on or proximate to a national landmark.

### *5.11.1.3 Habitat Conservation Plan*

The GKR Project alignment does not overlap the area addressed under any habitat conservation plan.

## 5.11.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the GKR Project.

### *5.11.2.1 Regulatory Setting*

#### 5.11.2.1.1 Federal

##### *5.11.2.1.1.1 Federal Land Policy and Management Act*

Under the Federal Land Policy Management Act (FLPMA), Federal land management agencies are required to acknowledge local plans and participation (Title 43, United States Code Annotated (USCA) Section 1712(c)(9)).

##### *5.11.2.1.1.2 USFS Sequoia National Forest, Draft Revised Land Management Plan for the Sequoia National Forest, Recreation Places*

Lands traversed by the GKR Project alignment are designated as part of the Lower Kern River Place. The Recreation Places and Desired Conditions provide a framework to guide management efforts to sustain scenery and recreation settings, recreation opportunities, and recreation sites and infrastructure. The desired condition for the area through which the GKR Project alignment passes is as follows:

> Desired Conditions (MA-LWKN-DC)
>
> 1 – Lower Kern River Place is sustained as a natural appearing landscape providing a balance of developed and dispersed river oriented recreation opportunities and settings. The river, which is wild and scenic river status eligible, provides opportunities for the public to enjoy nature-based activities along the Kern River. Outfitter and guide services provide world class whitewater boating opportunities. Areas of high use maintain a quality experience for visitors and promote a stewardship ethic. Utilities are considered if their location will not limit the achievement of the roles, contributions and sense of the place. Management is aligned with the recreation opportunity spectrum and the roles, contributions and sense of the place. Scenic character is sustained by resilient landscapes that support and enhance the scenery setting.

##### *5.11.2.1.1.3 USFS Los Padres National Forest Land Management Plan Strategy*

The Los Padres Land Management Plan Strategy describes the strategic direction at the broad program-level for managing the land and its resources. The management strategies are consistent with the concept of adaptive management and sustainable resource use. The Plan's program tiers from National Strategic Plan Goals. The Plan identifies the Desired Condition for the Mt. Pinos Place is that it be maintained as a naturally evolving and naturally appearing landscape that functions as a big tree (old growth) recreation environment. The Program Emphasis for the Mt. Pinos Place is to focus on perpetuating healthy conifer forests.

#### 5.11.2.1.2 State

##### *5.11.2.1.2.1 California Public Utilities Commission*

Pursuant to CPUC GO 131-D, the CPUC has sole and exclusive jurisdiction over the siting and design of electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities in the State of California. Under CEQA, the CPUC is the Lead Agency with respect to such GKR Project elements within the State of California. SCE is required to comply with GO 131-D and is seeking a Permit to Construct from the CPUC for the GKR Project.

#### 5.11.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the GKR Project. Pursuant to GO 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the GKR Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

##### *5.11.2.1.3.1 Kern County General Plan, Energy Element*

The Kern County Energy Element is a comprehensive document which defines critical energy related issues facing the County and sets forth goals, policies, and implementation measures to protect the County's energy resources and encourage orderly energy development while affording the maximum protection for the public's health, safety, and the environment.

The Energy Element has three primary objectives:

- Resource management and protection.
- Establishing development standards to provide for the protection of the environment, public health, and safety.
- Promoting and facilitating energy development.

Section 5.4.7, Transmission Lines, states a goal to "encourage the safe and orderly development of transmission lines to access Kern County's electrical resources along routes, which minimize potential adverse environmental effects."  Achievement of this goal will be driven by a number of Policies, including:

1. The County should encourage the development and upgrading of transmission lines and associated facilities (e.g., substations) as needed to serve Kern County's residents and access the County's generating resources, insofar as transmission lines do not create significant environmental or public health and safety hazards.
2. The County shall review all proposed transmission lines and their alignments for conformity with the Land Use, Conservation, and Open Space Element of this General Plan.
3. In reviewing proposals for new transmission lines and/or capacity, the County should assert a preference for upgrade of existing lines and use of existing corridors where feasible.

4. The County should work with other agencies in establishing routes for proposed transmission lines.
5. The County should discourage the siting of above-ground transmission lines in visually sensitive areas.
6. The County should encourage new transmission lines to be sited/configured to avoid or minimize collision and electrocution hazards to raptors.

*5.11.2.1.3.2 Kern County, Zoning Ordinance*

Per Section 19.08.090 of the Kern County Zoning Ordinance, the provisions of the Ordinance do not apply to the construction, installation, operation and maintenance of the types of facilities that would be replaced under the GKR Project:

> 19.08.090 - Public utility uses—County review.
>
> The provisions of this title shall not be construed to apply to the construction, installation, operation and maintenance of public utility distribution and transmission lines or supporting towers, and poles and underground facilities for providing gas, water, electricity, or telephone and telegraph services by public utility companies or any other company under the jurisdiction of the California Public Utilities Commission. Additionally, the provisions of this title shall not apply to privately constructed, operated or maintained electrical transmission lines and towers, provided that said lines are constructed, maintained and operated in accordance with, and subject to, the requirements of the California Public Utilities Commission and further provided that said transmission lines are tied into a public utility grid system, and except as otherwise provided for in Chapter 19.64. Microwave and cellular transmission facilities shall be subject to the provisions of this title, except where local land use authority is expressly preempted by state or Federal laws or regulations.

*5.11.2.1.3.3 Los Angeles County General Plan*

Chapter 13, Public Services and Facilities Element, VI. Utilities includes a single Goal (PS/F 6: A County with adequate public utilities) related to electrical infrastructure; none of the associated policies are relevant to the construction or operation of subtransmission lines such as those included in the GKR Project.

*5.11.2.1.3.4 Los Angeles County Zoning Ordinance*

The Los Angeles County Zoning Ordinance is silent regarding the construction or operation of subtransmission lines such as those included in the GKR Project on lands zoned Heavy Agriculture and Open Space.

A portion of Segment 3 lies within a Significant Ecological Area (SEA-17, the San Andreas SEA). Significant Ecological Areas have been designated in Los Angeles County to identify lands with important biological resources representing the biodiversity of the County. Ordinance establishes permitting requirements, development standards, and review processes for development within SEAs.

*5.11.2.1.3.5 City of Arvin, General Plan*

The City of Arvin's General Plan contains no goals, policies, or implementation actions relevant to the GKR Project.

*5.11.2.1.3.6 City of Arvin, Zoning Ordinance*

Per Section 17.50.110 of the City of Arvin Zoning Ordinance, the provisions of the Ordinance do not apply to the construction, installation, operation and maintenance of the types of facilities that would be replaced under the GKR Project:

> 17.50.110 - Public utility uses.
>
> The provisions of this title shall not be construed to apply to the construction, installation, operation and maintenance of public utility distribution and transmission lines, towers and poles and underground facilities for providing gas, water, electricity or telephone and telegraph services by public utility companies under the jurisdiction of the Public Utilities Commission of the state, provided, however, before any right-of-way for such transmission lines is acquired, the proposed route shall be submitted to the planning commission for review and recommendation.

*5.11.2.1.3.7 City of Bakersfield, General Plan*

The City of Bakersfield General Plan does not include goals or policies applicable to the GKR Project.

*5.11.2.1.3.8 City of Bakersfield, Land Use Zoning Ordinance of the City*

Section 17.08.060, Site plan approval required states:

> No person shall undertake, conduct, use or construct, or cause to be undertaken, conducted, used or constructed, any of the following without first obtaining site plan approval: any change in the actual use of land or improvements thereon, including, but not limited to, the construction of any improvements which require a building permit, enlargement, reconstruction or renovation of improvements; provided, however, site plan approval may be consolidated with other discretionary approvals such as conditional use permits and planned commercial developments.

Section 17.08.070, Exemptions from site plan review, notes that unoccupied utility buildings and structures are specifically exempt from and do not require site plan approval.

## 5.11.3 Impact Questions

### *5.11.3.1 Impact Questions*

The significance criteria for assessing the impacts to land use and planning are derived from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Physically divide an established community
- Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect

### *5.11.3.2 Additional CEQA Impact Questions*

There are no CPUC-identified additional CEQA impact questions.

## 5.11.4 Impact Analysis

### *5.11.4.1 Impact Analysis*

#### 5.11.4.1.1 Would the project physically divide an established community?

*5.11.4.1.1.1 Construction*

**No Impact.** The GKR Project is located largely in rural areas where the land is undeveloped and is generally described as open space. The existing subtransmission lines included under the GKR Project are currently, and have historically been, located in and adjacent to a number of established communities along the alignment. The reconstructed subtransmission line would be located within, or immediately proximate to, the existing alignment, and thus would also be present in these existing communities. The replacement subtransmission structures and conductor would not incrementally contribute to any physical division of an established community beyond that which is already occurring due to the existing GKR Project infrastructure. Therefore, no impacts would occur under this criterion during construction.

*5.11.4.1.1.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.11.4.1.2 Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

*5.11.4.1.2.1 Construction*

**No Impact.** The GKR Project would be located primarily within the existing ROW located on Federal, State, and private lands within Kern County and Los Angeles County and in the cities of Arvin and Bakersfield, and in franchise in Kern County.

As presented in the Regulatory Setting section, the provisions of the Kern County Zoning Ordinance and City of Arvin Zoning Ordinance do not apply to the construction, installation, operation and maintenance of infrastructure under the jurisdiction of the CPUC. The Los Angeles County Zoning Ordinance is silent regarding the construction or operation of subtransmission lines such as those included under the GKR Project on lands zoned Heavy Agriculture and Open Space. The City of Bakersfield Zoning Ordinance exempts unoccupied utility buildings and structures from site plan approval.

As presented in the Regulatory Setting section, the construction or operation of electric infrastructure as included under the GKR Project is not prohibited in any of the land uses designated in Kern County, Los Angeles County, or the cities of Arvin or Bakersfield. Further, the GKR Project is consistent with Policies contained in the Kern County General Plan Energy Element, as it is routed to minimize potential adverse environmental effects and meets the County's preference for the use of existing corridors where feasible.

There are no identified land use constraints on SNF or State lands crossed by the GKR Project alignment. Replacement of the single subtransmission structure on LPNF lands would not conflict with the Desired Condition or Program Emphasis for the Mt. Pinos Place.

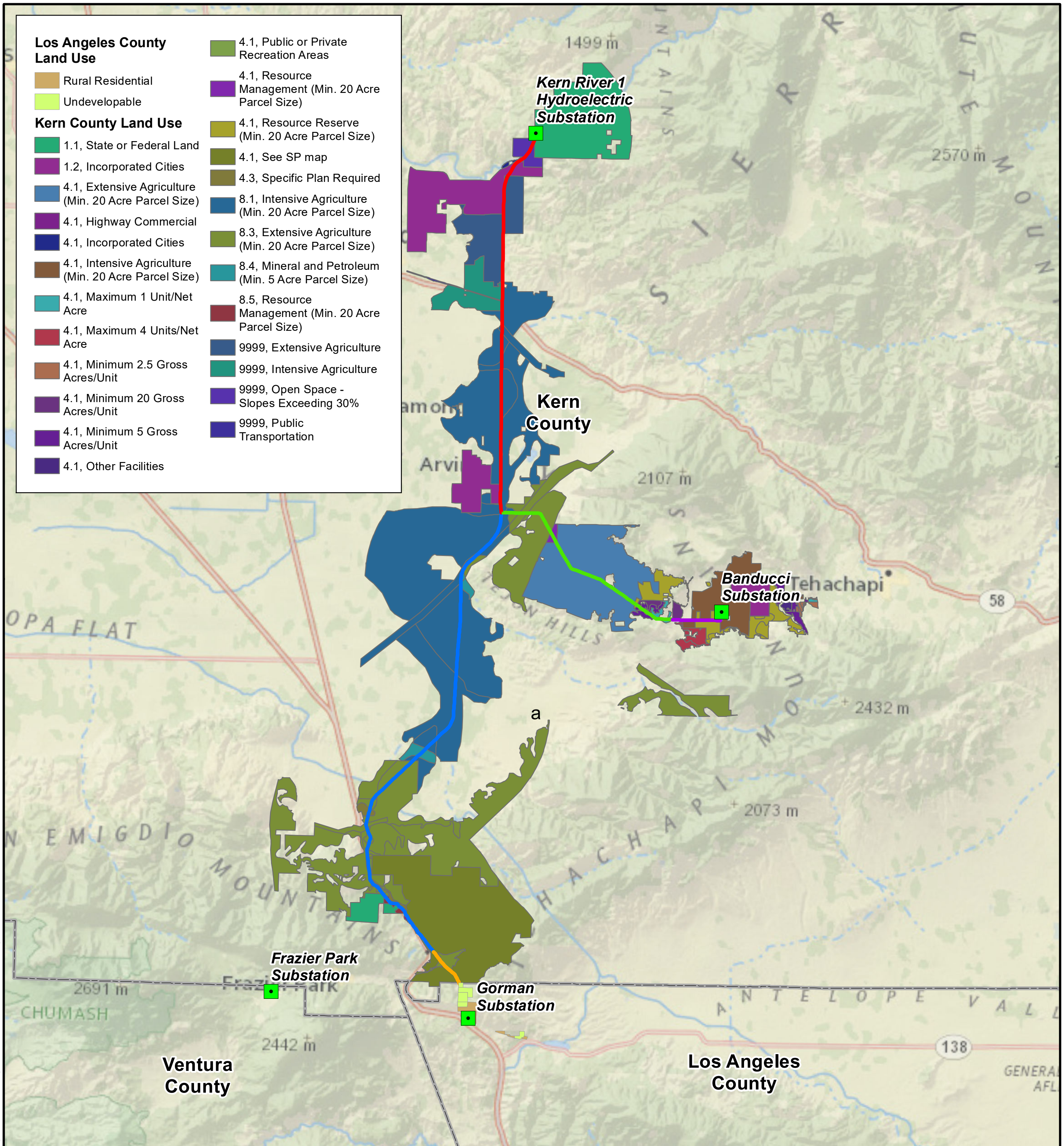
Further, the GKR Project would comply with all conditions and measures included in authorizations and permits for the purpose of avoiding or mitigating an environmental effect. Therefore, construction of the GKR Project would be consistent with each Federal land management plan. Accordingly, no impacts would occur under this criterion.

*5.11.4.1.2.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

### 5.11.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for the Land Use resource area.




## Legend

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Counties

NOTES:
(1) Kern Co Land Use source:
*https://arcadis.maps.arcgis.com/home/item.html?id=575bd48fb01c44899334301c8e6da015*
(2) LA Land Use source:
*https://arcadis.maps.arcgis.com/home/item.html?id=9d180fb30850443c92edf1ed108694c5*

0 10
Miles

N

# GORMAN-KERN RIVER 66 kV PROJECT

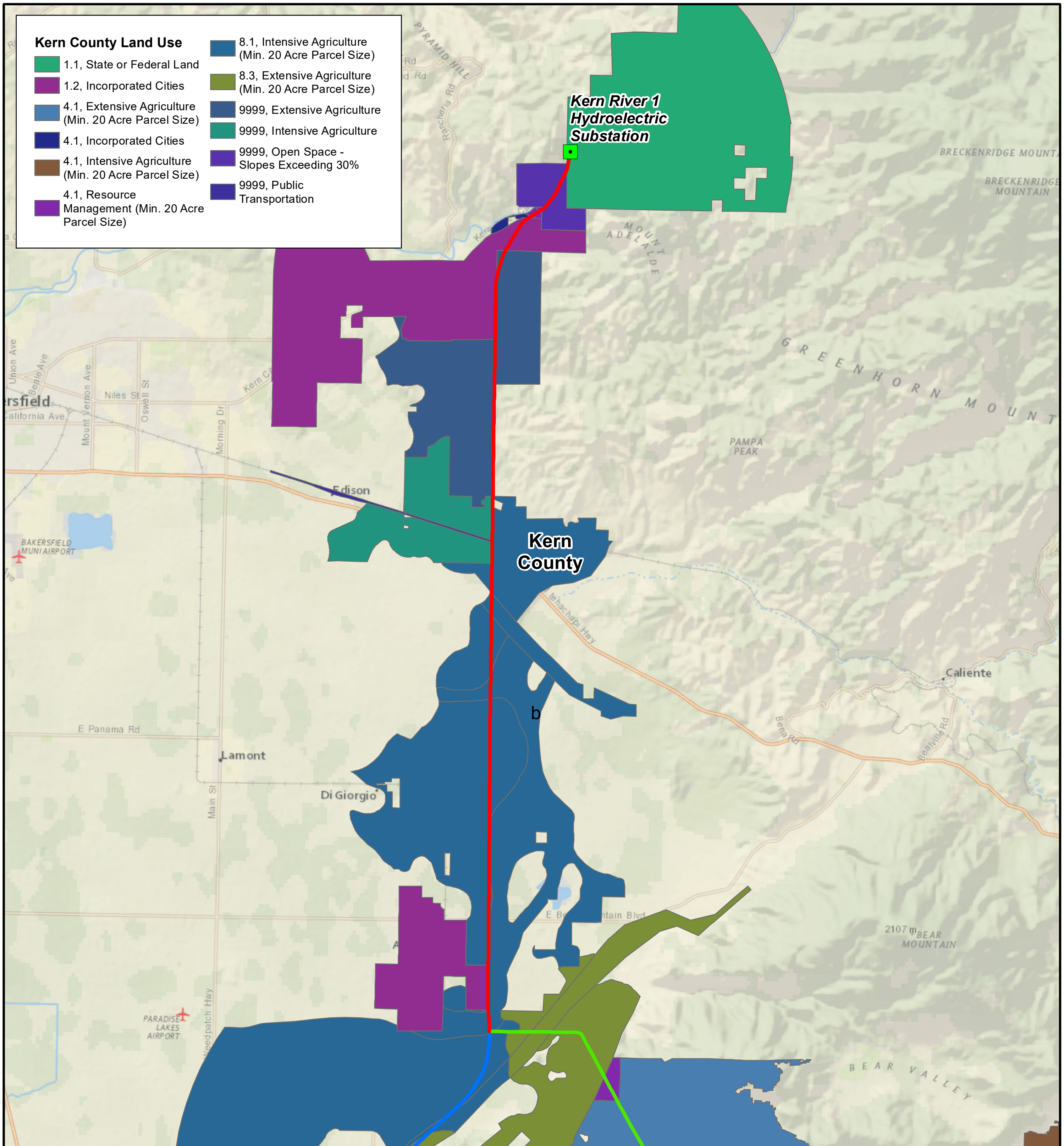
## LAND USE DESIGNATIONS

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

FIGURESET
5.11-1.a

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-11-1_LandUseDesignations_KERN.mxd 6/15/2021




## Legend

- Substation
- Segment 1
- Segment 2
- Segment 4
- Counties

NOTES:
(1) Kern Co Land Use source:
*https://arcadis.maps.arcgis.com/home/item.html?id=575bd48fb01c44899334301c8e6da015*
(2) LA Land Use source:
*https://arcadis.maps.arcgis.com/home/item.html?id=9d180fb30850443c92edf1ed108694c5*

0 — 4
Miles

N

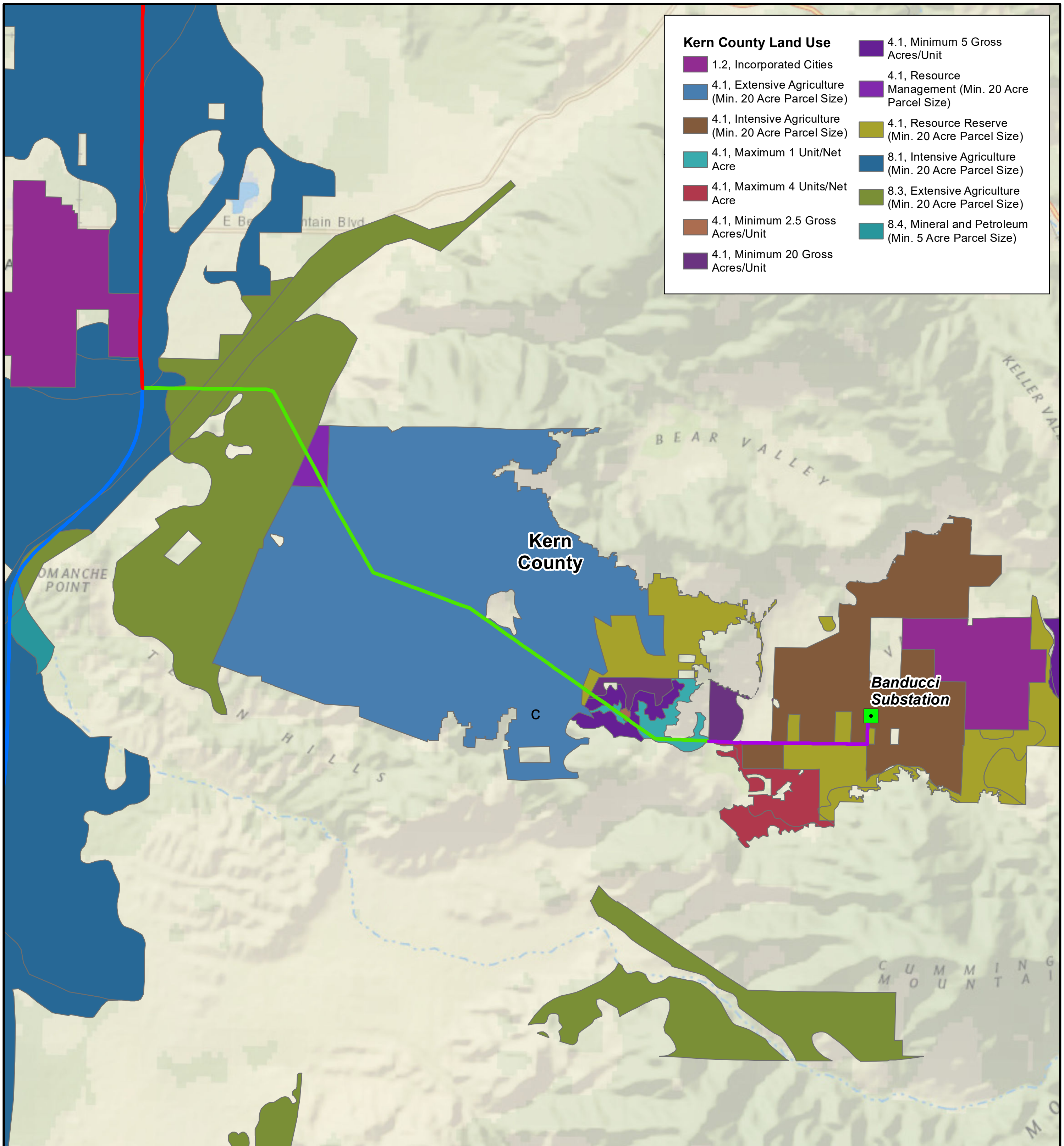
# GORMAN-KERN RIVER 66 kV PROJECT

## LAND USE DESIGNATIONS

ARCADIS
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURESET
5.11-1.b

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-11-1_LandUseDesignations_KERN.mxd 6/15/2021




## Legend

- Substation
- Segment 1
- Segment 2
- Segment 4
- Segment 5
- Counties

NOTES:
(1) Kern Co Land Use source:
*https://arcadis.maps.arcgis.com/home/item.html?id=575bd48fb01c44899334301c8e6da015*
(2) LA Land Use source:
*https://arcadis.maps.arcgis.com/home/item.html?id=9d180fb30850443c92edf1ed108694c5*

0 3.4
Miles

N

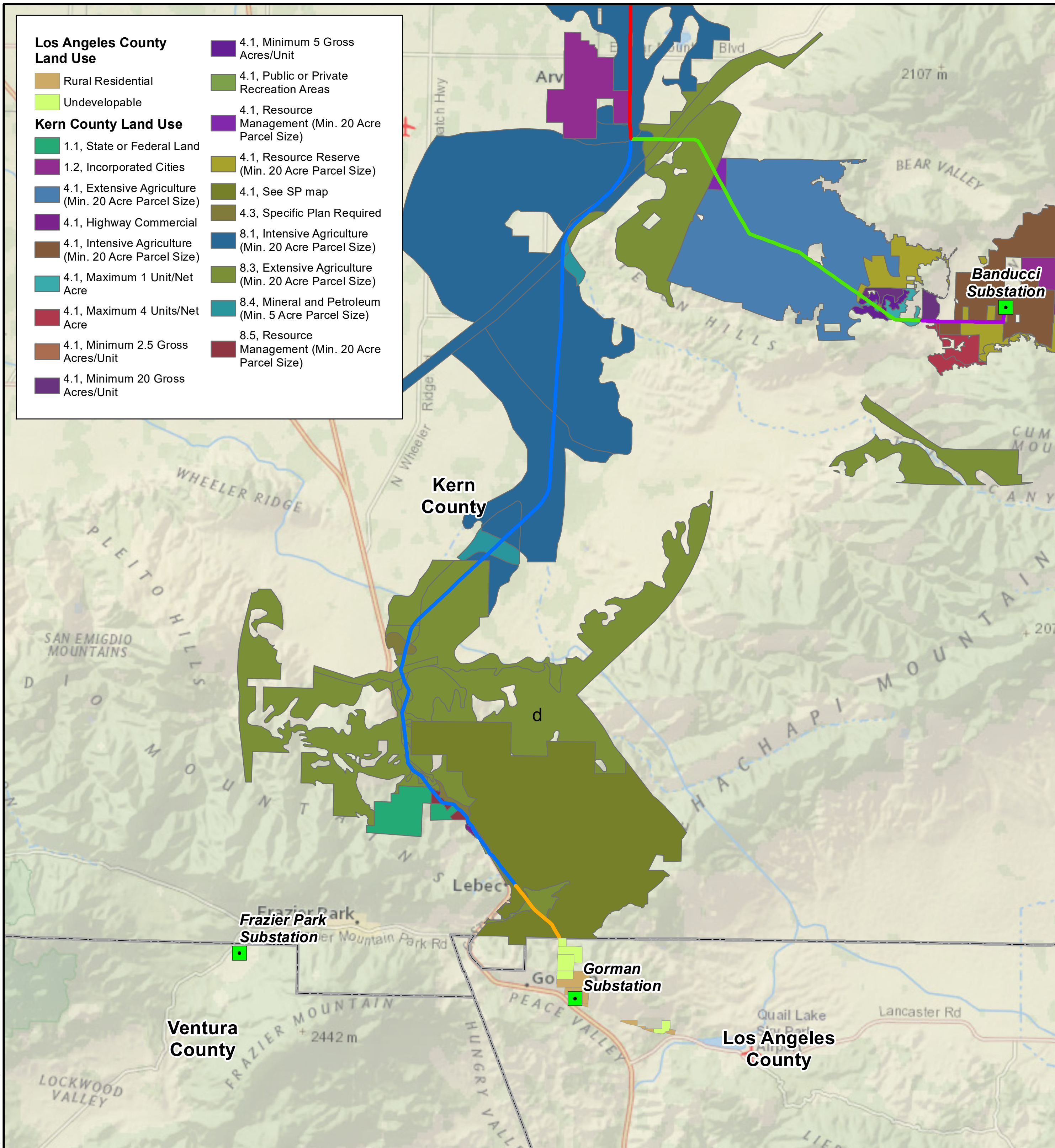
# GORMAN-KERN RIVER 66 kV PROJECT

# LAND USE DESIGNATIONS

ARCADIS
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURESET
5.11-1.c

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-11-1_LandUseDesignations_KERN.mxd 6/15/2021




## Legend

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Counties

NOTES:
(1) Kern Co Land Use source:
*https://arcadis.maps.arcgis.com/home/item.html?id=575bd48fb01c44899334301c8e6da015*
(2) LA Land Use source:
*https://arcadis.maps.arcgis.com/home/item.html?id=9d180fb30850443c92edf1ed108694c5*

0 — 6
Miles

N

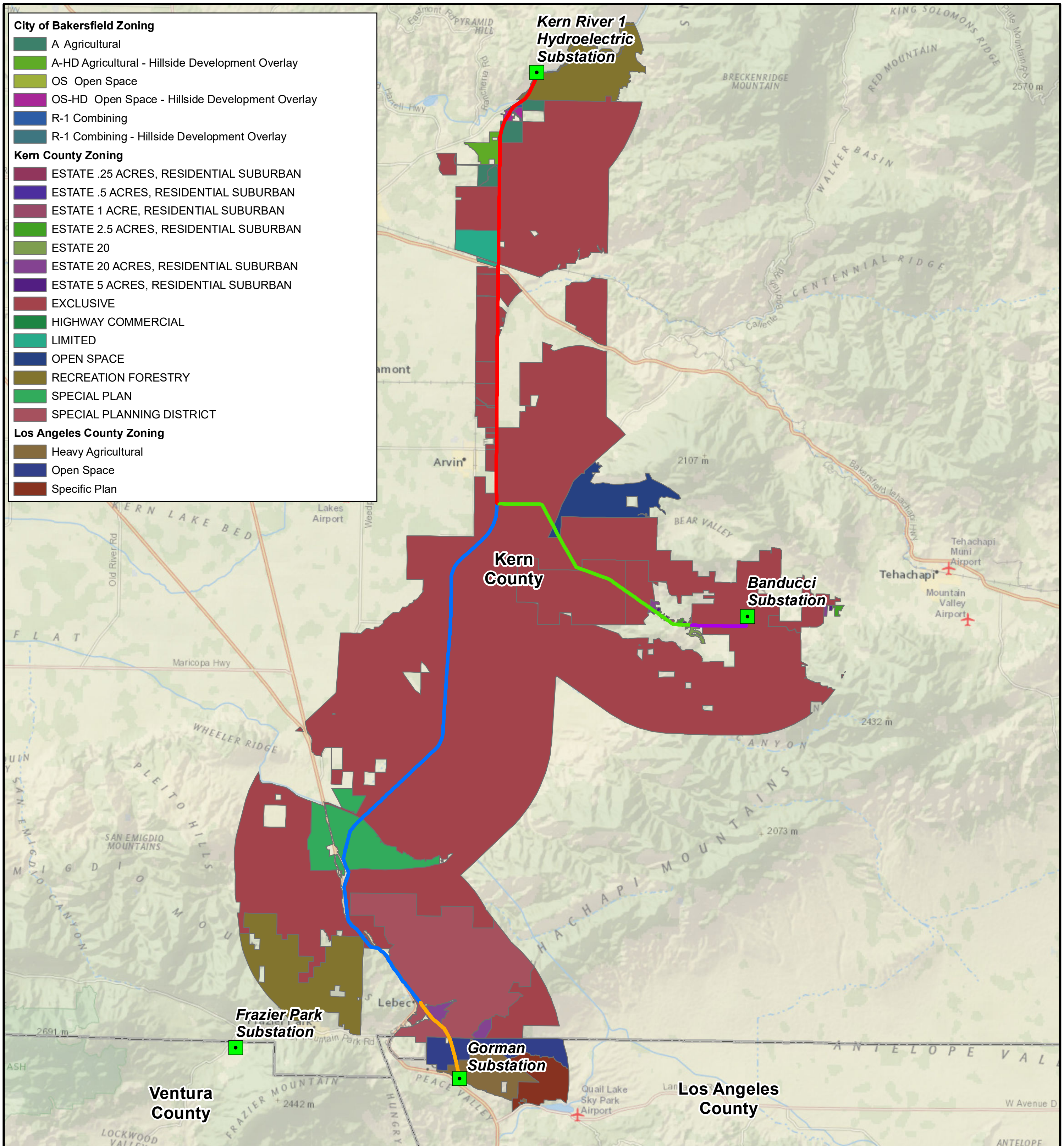
# GORMAN-KERN RIVER 66 kV PROJECT

# LAND USE DESIGNATIONS

ARCADIS — SOUTHERN CALIFORNIA EDISON — An EDISON INTERNATIONAL® Company

FIGURESET
5.11-1.d

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-11-1_LandUseDesignations_KERN.mxd 6/15/2021




## Legend

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Counties

NOTES:
(1) Kern County Zoning source:
*https://arcadis.maps.arcgis.com/home/item.html?id=a2ecaff1bb0b4a62873fef8d41aa197e*
(2) LA County Zoning source:
*https://arcadis.maps.arcgis.com/home/item.html?id=3a3cf8766dca45e7a9fd0fbb8d0cd93c*

0 10
Miles

N

**GORMAN-KERN RIVER 66 kV PROJECT**

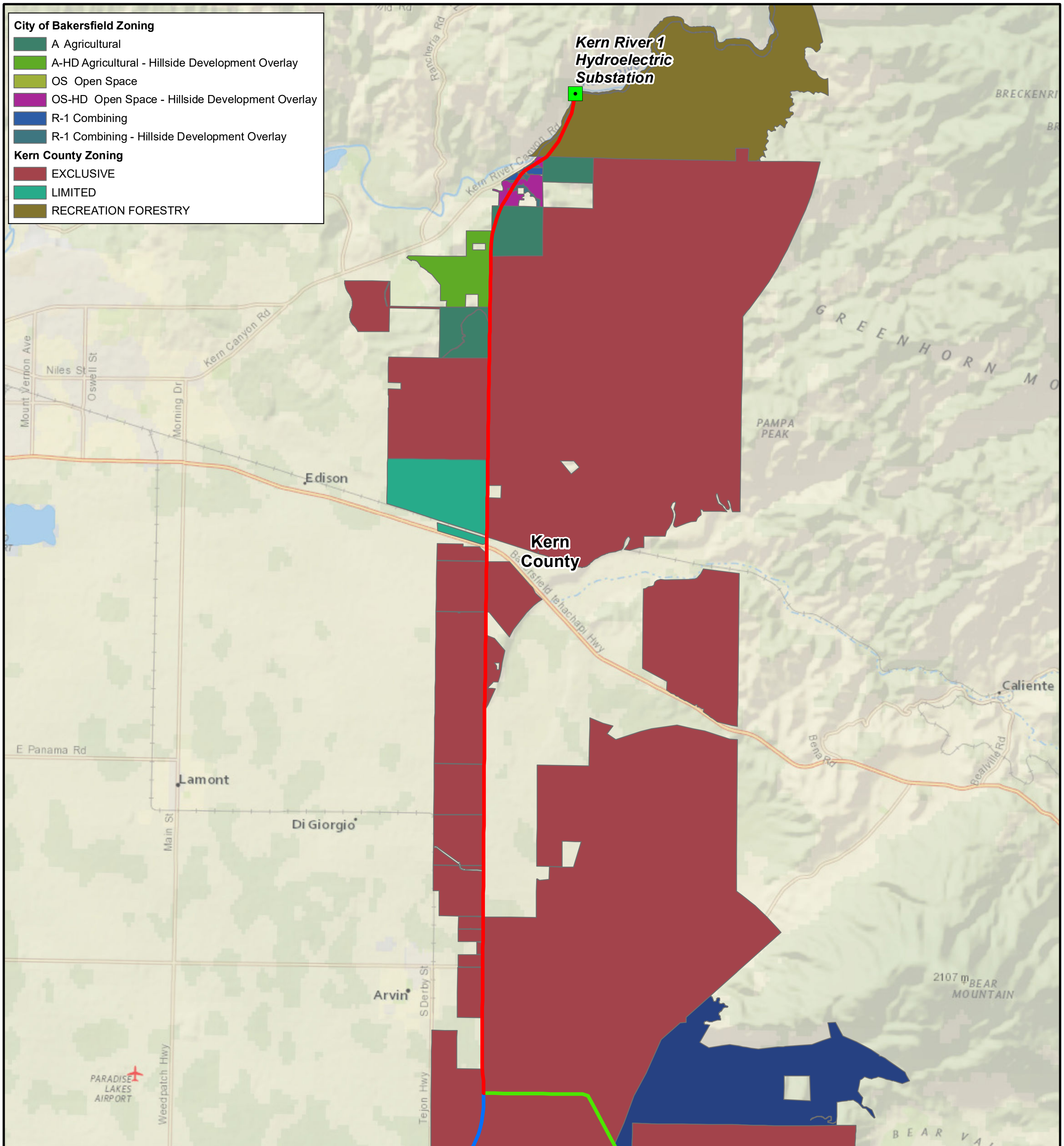
**ZONING DESIGNATIONS**

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

**FIGURESET**
**5.11-2.a**

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-11-2_ZoningDesignations_KERN.mxd 6/15/2021 9:22:33 PM




## Legend

- Substation
- Segment 1
- Segment 2
- Segment 4
- Counties

NOTES:
(1) Kern County Zoning source:
*https://arcadis.maps.arcgis.com/home/item.html?id=a2ecaff1bb0b4a62873fef8d41aa197e*
(2) LA County Zoning source:
*https://arcadis.maps.arcgis.com/home/item.html?id=3a3cf8766dca45e7a9fd0fbb8d0cd93c*

0 4
Miles

N

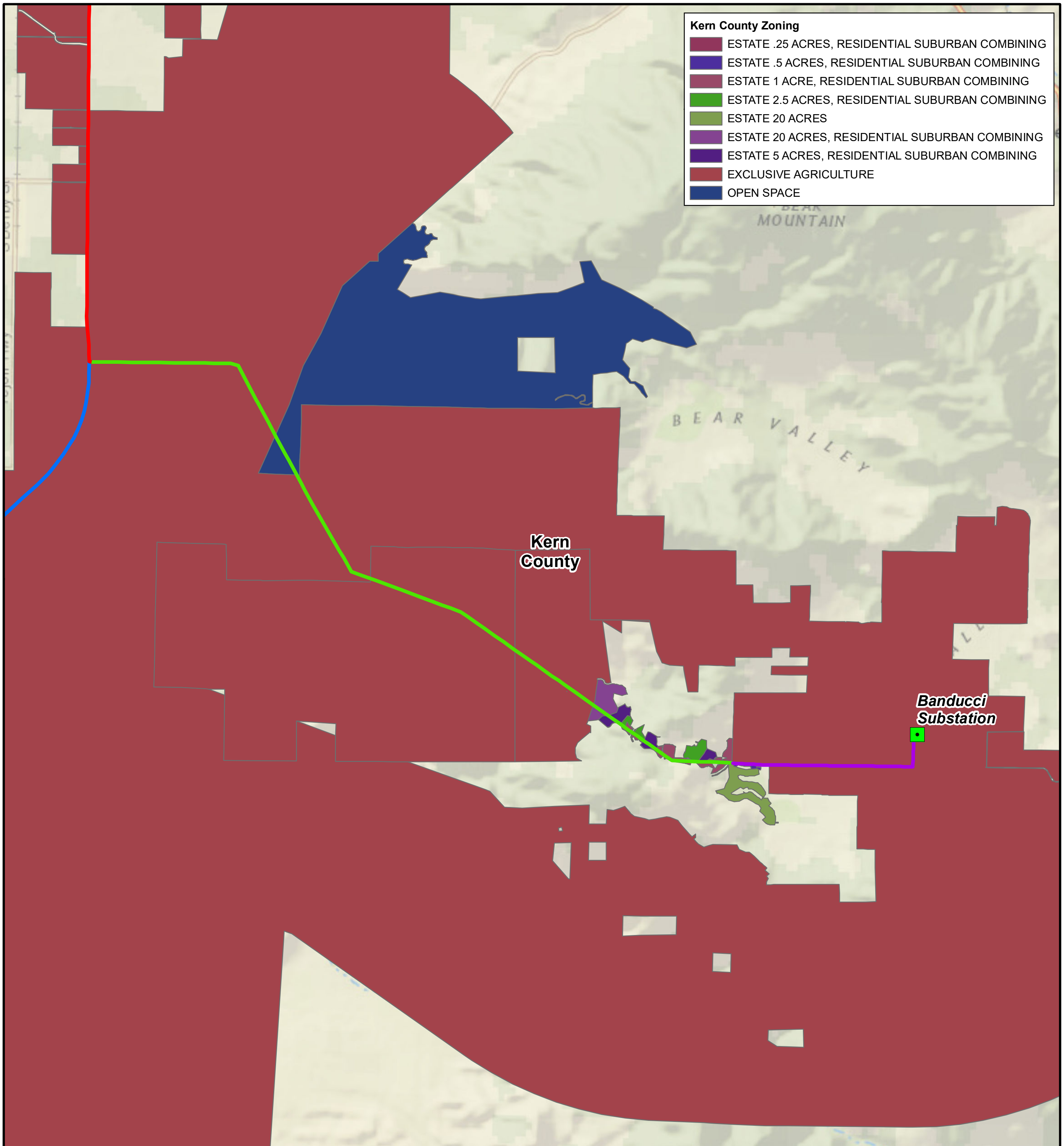
# GORMAN-KERN RIVER 66 kV PROJECT

## ZONING DESIGNATIONS

ARCADIS
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURESET
5.11-2.b

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-11-2_ZoningDesignations_KERN.mxd 6/15/2021 9:22:33 PM




## Legend

- Substation
- Segment 1
- Segment 2
- Segment 4
- Segment 5
- Counties

NOTES:
(1) Kern County Zoning source:
*https://arcadis.maps.arcgis.com/home/item.html?id=a2ecaff1bb0b4a62873fef8d41aa197e*
(2) LA County Zoning source:
*https://arcadis.maps.arcgis.com/home/item.html?id=3a3cf8766dca45e7a9fd0fbb8d0cd93c*

0 3.2
Miles

N

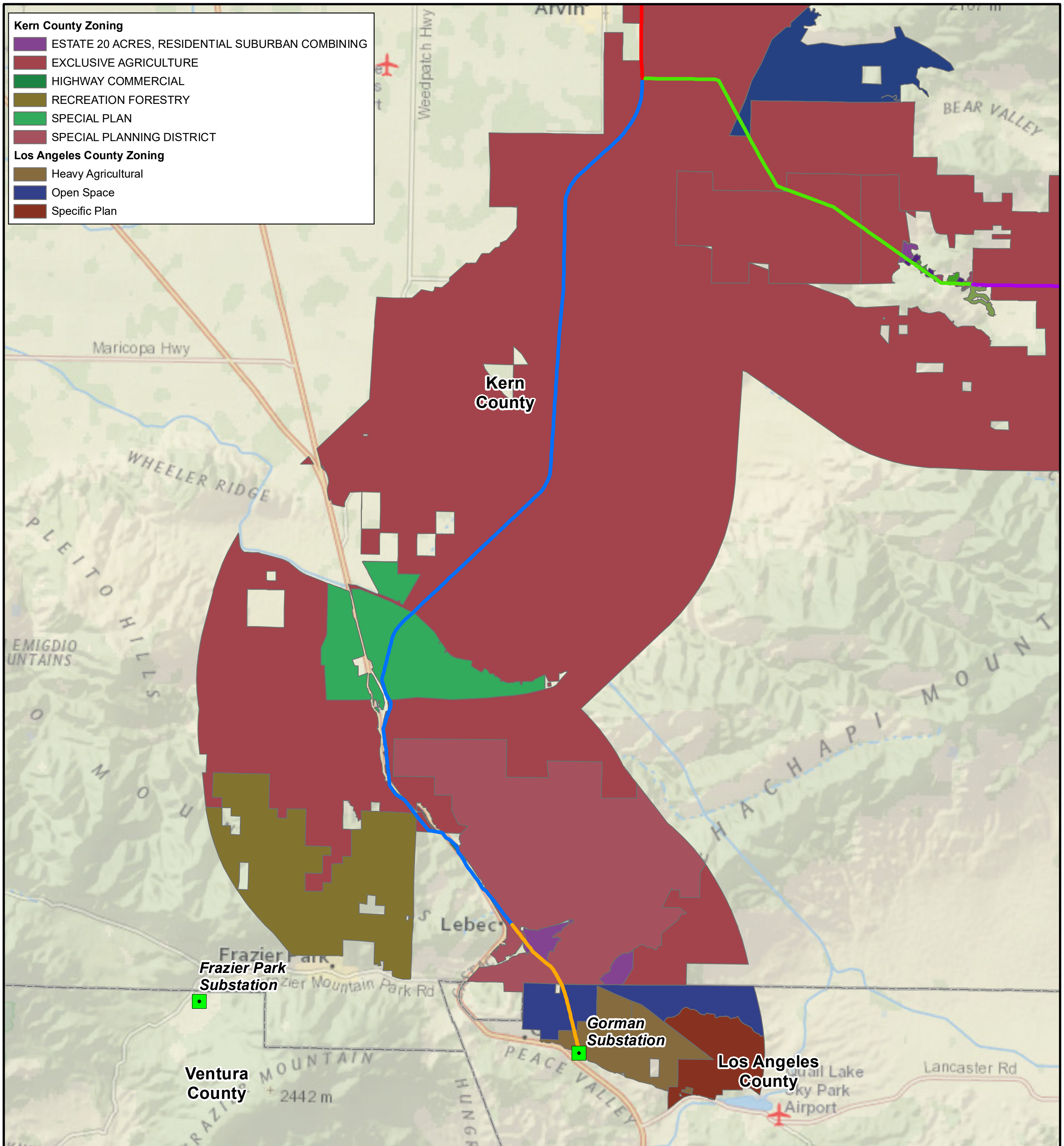
# GORMAN-KERN RIVER 66 kV PROJECT

## ZONING DESIGNATIONS

ARCADIS
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURESET
5.11-2.c

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-11-2_ZoningDesignations_KERN.mxd 6/15/2021 9:22:33 PM




## Legend

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Counties

NOTES:
(1) Kern County Zoning source:
*https://arcadis.maps.arcgis.com/home/item.html?id=a2ecaff1bb0b4a62873fef8d41aa197e*
(2) LA County Zoning source:
*https://arcadis.maps.arcgis.com/home/item.html?id=3a3cf8766dca45e7a9fd0fbb8d0cd93c*

0 6
Miles

N

# GORMAN-KERN RIVER 66 kV PROJECT

## ZONING DESIGNATIONS

ARCADIS SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company

FIGURESET
5.11-2.d

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-11-2_ZoningDesignations_KERN.mxd 6/15/2021 9:22:33 PM

## 5.12 Mineral Resources

This Section of the PEA describes the mineral resources in the area of the GKR Project, as well as the potential impacts resulting from construction and operation of the GKR Project.

According to the United States Geological Survey (USGS), a mineral resource is defined as a concentration of naturally occurring solid, liquid, or gaseous materials in or on the earth's crust in such a form and quantity, and of such a grade or quality, that it has reasonable prospects for economic extraction, either currently or in the future. Mineral resources include oil, natural gas, and metallic and non-metallic deposits. Mineral resources data were obtained from the following resources:

- USGS
- California Department of Conservation (DOC)
- California Geological Survey (CGS)
- Kern County General Plan
- Los Angeles County General Plan
- City of Arvin General Plan
- City of Bakersfield General Plan

Aerial photographs were also used to analyze mineral resources in the vicinity of the GKR Project.

### 5.12.1 Environmental Setting

#### *5.12.1.1 Mineral Resources*

##### 5.12.1.1.1 Known Mineral Resources

Mineral resources along the GKR Project alignment are presented in Figure 5.12-1.

*5.12.1.1.1.1 Kern County*

Mineral resource and petroleum extraction are core elements of Kern County's economy. Borax, cement production, and construction aggregates constitute major economic mineral resources (Kern County 2009). The State Geologist has classified more than 2,970 square miles of land in Kern County as Mineral Resource Zones (MRZs) of varying significance (Koehler 1999). Significant mineral resources located in Kern County in the vicinity of the GKR Project alignment include Portland cement concrete-grade aggregates (PCC); asphalt concrete-grade aggregates (AC); and base and fill aggregates (BF) (Busch 2009).

The GKR Project alignment crosses areas designated as MRZ-1 and MRZ-2 for PCC and MRZ-2 for BF, and areas designated MRZ-3. The GKR Project alignment does not cross any active mineral extraction activity sites (California Department of Conservation 2018).

*5.12.1.1.1.2 Los Angeles County*

The portion of the GKR Project alignment located in unincorporated Los Angeles County is in the Palmdale Production-Consumption Region. These lands are designated MRZ-3 or are unclassified (Miller 1994).

##### 5.12.1.1.2 Active Mining Claims

A single placer mining claim (Claim Name K ABLE #56789101112, Serial Number CAMC279457) is located in the same Public Land Survey System Section as the existing Kern River 1 Hydroelectric

Substation and the northern portion of Segment 1. No other active mining claims have been identified along the GKR Project alignment.

#### 5.12.1.1.3 Active Mines

The GKR Project alignment does not cross any active mineral extraction activity sites in Kern County or Los Angeles County (California Department of Conservation 2018).

#### 5.12.1.1.4 Resource Recovery Sites

There are no mineral resource recovery sites in the vicinity of the GKR Project alignment delineated in any General Plan, in a specific plan, or in any other land use plan.

## 5.12.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the GKR Project.

### *5.12.2.1 Regulatory Setting*

#### 5.12.2.1.1 Federal

*5.12.2.1.1.1 Surface Mining Control and Reclamation Act of 1977*

This Act (30 U.S.C. §§ 1201-1328) establishes a program for regulating surface coal mining and reclamation activities. It establishes mandatory uniform standards for these activities on State and Federal lands, including a requirement that adverse impacts on fish, wildlife, and related environmental values be minimized. The Act creates an Abandoned Mine Reclamation Fund for use in reclaiming and restoring land and water resources adversely affected by mining practices.

#### 5.12.2.1.2 State

*5.12.2.1.2.1 California Surface Mining and Reclamation Act (Public Resources Code § 2710 et seq.)*

The protection of regionally significant mineral resource deposits is one of the main emphases of the Surface Mining and Reclamation Act (SMARA). The law specifically mandates a two-phased process, commonly referred to as classification and designation, for mineral resources. The California Geological Survey is responsible under SMARA for carrying out the classification phase of the process.

SMARA requires the State Geologist (who is the chief administrator of the California Geological Survey) to classify lands into MRZs based on the known or inferred mineral resource potential of that land. The classification process is based solely on geology, without regard to land use or ownership. The primary goal of mineral land classification is to help ensure that the mineral resource potential of land is recognized and considered in the land use planning process. MRZ definitions are provided in Table 5.12-1.

The California Mining and Geology Board is responsible for the second phase, which allows the Board to identify areas within a production-consumption region that contain significant deposits of certain mineral resources that may be needed to meet the region's future demand.

**Table 5.12-1. Mineral Resource Zone Definitions**

| | |
|---|---|
| MRZ-1 | Areas where available geologic information indicates there is little likelihood for the presence of mineral resources. |
| MRZ-2a | Areas that contain significant measured or indicated reserves. |
| MRZ-2b | Areas where geologic information indicates that significant inferred resources or demonstrated subeconomic resources are present. |
| MRZ-3a | Areas likely to contain undiscovered mineral deposits similar to known deposits in the same producing district or region (hypothetical resources). |
| MRZ-3b | Areas judged to be favorable geologic environments for mineral resource occurrence, but where mineral discoveries have not been made in the region (speculative resources). |
| MRZ-4 | Areas where geologic information does not rule out either the presence or absence of mineral resources. |
| ARA-6 | Area with aggregate resources rated as highly significant. |

Source: California Department of Conservation, Division of Mines and Geology

#### 5.12.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the GKR Project. Pursuant to GO 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the GKR Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

*5.12.2.1.3.1 Kern County General Plan, Land Use, Open Space, and Conservation Element*

The policies, goals, and implementation measures in the Kern County General Plan for mineral resources are contained in Section 1.9, Resources, and provided below:

> Goal 2. To protect areas of important mineral, petroleum, and agricultural resource potential for future use.
>
> Policy 17. Lands classified as MRZ-2, as designated by the State of California, should be protected from encroachment of incompatible land uses.
>
> Policy 25. Discourage incompatible land use adjacent to Map Code 8.4 (Mineral and Petroleum) areas.
>
> Implementation Measure H. Use the California Geological Survey's latest maps to locate mineral deposits until the regional and statewide importance mineral deposits map has been completed, as required by the Surface Mining and Reclamation Act.

*5.12.2.1.3.2 Los Angeles County General Plan*

The lands traversed by the GKR Project have an undetermined mineral resource significance or are unclassified; further, there is no active mining on these lands (California Department of Conservation 2018). Therefore, there are no relevant goals or policies.

*5.12.2.1.3.3 City of Arvin General Plan*

There are no known mineral resources on lands within the City traversed by the GKR Project, and there is no active mining on these lands (California Department of Conservation 2018). Therefore, there are no relevant goals or policies.

*5.12.2.1.3.4 City of Bakersfield General Plan*

There are no known mineral resources on lands within the City traversed by the GKR Project, and there is no active mining on these lands (California Department of Conservation 2018). Therefore, there are no relevant goals or policies.

## 5.12.3 Impact Questions

### *5.12.3.1 Impact Questions*

The significance criteria for assessing the impacts to mineral resources come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state
- Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan

### *5.12.3.2 Additional CEQA Impact Questions*

There are no CPUC-identified additional CEQA impact questions.

## 5.12.4 Impact Analysis

### *5.12.4.1 Impact Analysis*

#### 5.12.4.1.1 Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

*5.12.4.1.1.1 Construction*

**No Impact.** The GKR Project crosses lands with known or inferred mineral resource that are of value to the region and the residents of the State; however, the GKR Project would not result in the loss of availability of any of these known mineral resources. The GKR Project involves the reconstruction or replacement of existing subtransmission facilities within or immediately proximate to the existing alignment. The existing infrastructure has been in place for decades; in that time and to the knowledge of SCE, the presence of the subtransmission infrastructure has not resulted in the loss of availability of any mineral resource. Because replacement subtransmission structures will be located proximate to existing subtransmission structures, mineral resources located within or proximate to the existing rights-of-way and easements that can be and are currently available to be safely extracted (i.e., that are available or that are actively mined) will continue to be available. Therefore, there would be no impact under this criterion.

*5.12.4.1.1.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.12.4.1.2 Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use?

*5.12.4.1.2.1 Construction*

**No Impact.** No mineral resource recovery sites in the vicinity of the GKR Project alignment are delineated in any General Plan, in a specific plan, or in any other land use plan. Therefore, there would be no impact under this criterion.

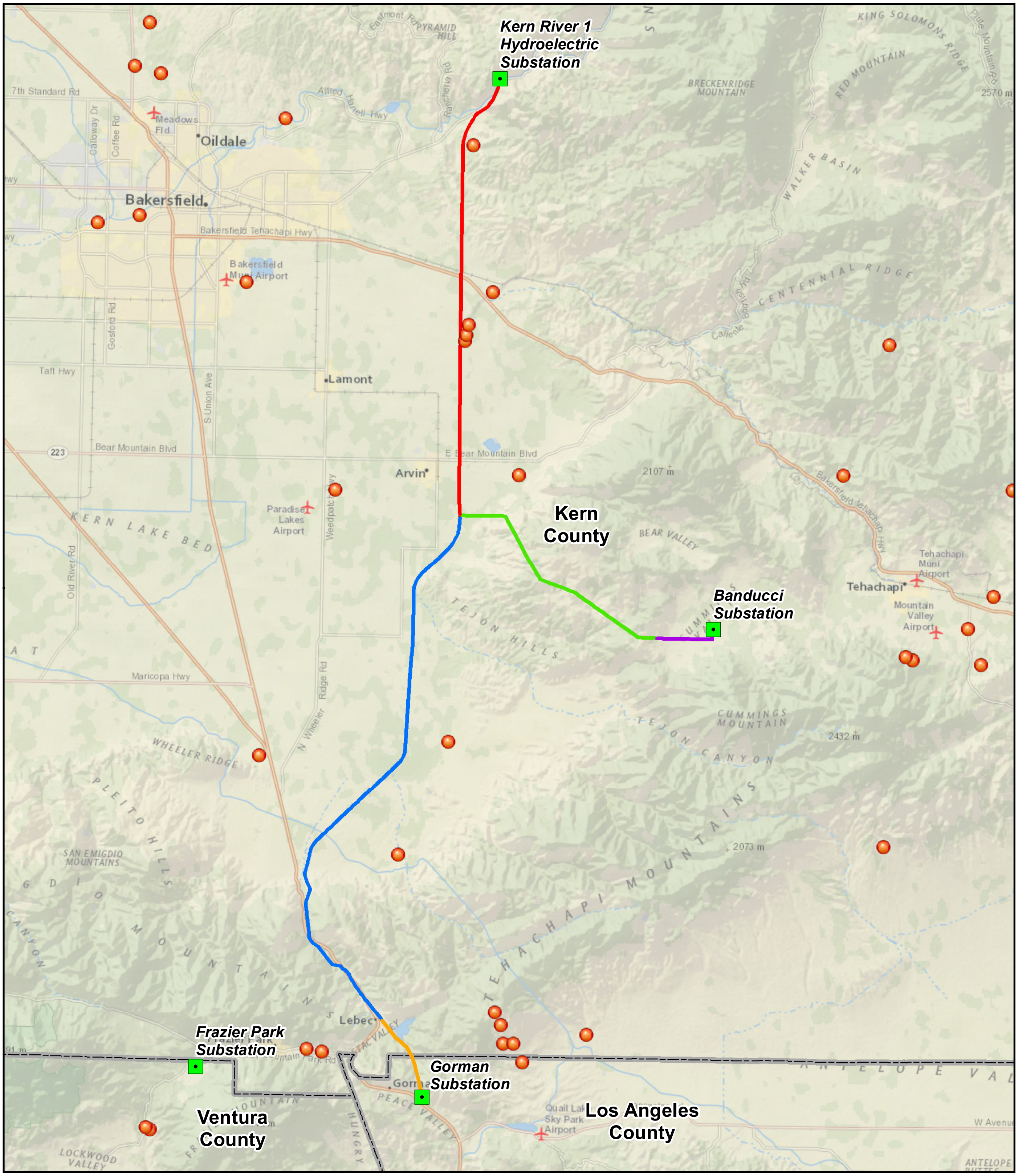
*5.12.4.1.2.2 Operations*

**No Impact.** No mineral resource recovery sites in the vicinity of the GKR Project alignment are delineated in any General Plan, in a specific plan, or in any other land use plan. Therefore, there would be no impact under this criterion.

### 5.12.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for the Mineral Resources resource area.

Page intentionally left blank.




## Legend

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Mines and Mineral Resources
- Counties

N

0 6 12
Miles

**GORMAN-KERN RIVER 66 kV PROJECT**

**MINES AND MINERAL RESOURCES**

ARCADIS | SOUTHERN CALIFORNIA EDISON | An EDISON INTERNATIONAL® Company

FIGURE
**5.12-1**

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-12-1_Mines_and_Mineral_Resources.mxd 04/05/2021

## 5.13 Noise

This Section of the PEA describes the existing noise in the area of the GKR Project, as well as the potential impacts resulting from construction and operation of the GKR Project.

### 5.13.1 Environmental Setting

#### *5.13.1.1 Noise Sensitive Land Uses*

The GKR Project is located in unincorporated Kern County, unincorporated Los Angeles County, the City of Arvin, and the City of Bakersfield. Project-related construction activities would occur mainly in rural agricultural areas and open space areas. However, some Project activities would be conducted in proximity to noise sensitive land uses, including rural residences, a school, and parks located near the existing subtransmission lines. Existing noise sources in proximity to these potentially noise-sensitive land uses include community noise, roadway and highway noise, and the operation of agricultural equipment. The definition of a sensitive receptor varies by jurisdiction; for the purposes of this analysis, the defined sensitive receptors and noise sensitive land uses contained in the Kern County General Plan are used:

- Residences (when occupied)
- Schools (when in-session)
- Hospitals and retirement homes
- Houses of worship (when occupied)
- Parks and recreational facilities/community centers

Noise sensitive land uses and noise sensitive receptors are illustrated in Figureset 5.13-1.

#### *5.13.1.2 Noise Setting*

##### 5.13.1.2.1 Ambient Noise

*5.13.1.2.1.1 Unincorporated Kern County*

Much of the land traversed by the GKR Project alignment in unincorporated Kern County is comprised of open space or is in agricultural production. The few sensitive receptors located near the GKR Project alignment in Segments 2 and 3 are comprised of scattered rural residences. In the eastern portion of Segment 4 and the western portion of Segment 5, suburbanized residential developments are found in proximity to the GKR Project alignment.

Location-specific noise level measurements for these areas are not widely available; however, the existing ambient noise in areas with rural residences or suburbanized residential development is taken to be similar to that described for the cities of Arvin and Bakersfield below. This is generally confirmed by noise measurements taken near the existing Banducci Substation, which recorded existing daytime ambient noise levels between 43 decibels A-weighted (dBA) and 62 dBA and nighttime ambient noise levels between 40 dBA and 56 dBA (SCE 2014).

*5.13.1.2.1.2 Unincorporated Los Angeles County*

The large majority of the land traversed by the GKR Project alignment in unincorporated Los Angeles County is comprised of open space. The primary source of ambient noise in this area is vehicle traffic on Gorman Post Road, a two-lane secondary roadway.

##### *5.13.1.2.1.3 City of Arvin*

The Noise Element of the City's General Plan notes that the "Arvin area does not experience any excessive noise sources at the present time" (City of Arvin 2018). The Element notes that transportation sources, including both rural roads and larger primary roads, are the primary contributors of noise emissions; the Element notes that because of the low traffic volume on most roads, their associated noise impact is "weak." The Arvin Branch Railroad Line in the eastern portion of the City is also cited as an intermittent source of noise. Noise measurements in the vicinity of the City range from 44 to 57 dBA Equivalent Continuous Sound Pressure Level (Leq) and 51 to 63 dBA day-night average sound level (Ldn) (Kern County 2018).

##### *5.13.1.2.1.4 City of Bakersfield*

The Noise Element of the City's General Plan notes that there are four major sources of community noise within the City: traffic on state highways and major local streets, railroad operations, airport operations and local industrial activities. Of these, only highway-related noise from State Route 178 is present in the vicinity of the GKR Project alignment. Noise measurements taken in urbanized areas of the City indicate the mean level as defined by Community Noise Equivalent Level (CNEL) is approximately 57 dB, ranging from 44 to 64 dB. The Noise Element notes that such levels are typical of suburban residential neighborhoods.

## 5.13.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the GKR Project.

### *5.13.2.1 Regulatory Setting*

#### 5.13.2.1.1 Federal

##### *5.13.2.1.1.1 U.S. Environmental Protection Agency*

The United States Environmental Protection Agency has developed and published criteria for environmental noise levels with a directive to protect public health and welfare with an adequate margin of safety (USEPA 1974). This USEPA criterion (Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety) was developed to be used as an acceptable guideline when no other local, county, or State standard has been established. However, the USEPA criterion is not meant to substitute for agency regulations or standards in cases where States and localities have developed criteria according to their individual needs and situations.

##### *5.13.2.1.1.2 Federal Transit Administration*

The Federal Transit Administration (FTA) has developed vibration impact thresholds for noise-sensitive buildings, residences, and institutional land uses. These thresholds are 80 vibration velocity (VdB) at residences and buildings where people normally sleep (e.g., nearby residences and daycare facilities) and 83 VdB at institutional buildings (e.g., schools and churches). These thresholds apply to conditions where there are an infrequent number of events per day.

#### 5.13.2.1.2 State

##### *5.13.2.1.2.1 California Noise Control Act*

The California Noise Control Act states that excessive noise is a serious hazard to public health and welfare, and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also recognizes that continuous and increasing bombardment of noise exists in urban, suburban, and rural areas. This act declares that the State of California has the responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. The

Office of Noise Control in the Department of Health Services provides assistance to local communities developing local noise control programs, and works with the Governor's Office of Planning and Research to provide guidance for the preparation of the required noise elements in city and county general plans, pursuant to Section 65302(f) of the California Government Code.

#### 5.13.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the GKR Project. Pursuant to GO 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the GKR Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

##### *5.13.2.1.3.1 Kern County Code of Ordinances*

Title 8, Health and Safety, Chapter 8.36 – Noise Control, details prohibitions on the generation of construction noise in unincorporated Kern County:

> Section 8.36.020 - Prohibited sounds.
> It is unlawful for any person to do, or cause to be done, any of the following acts within the unincorporated areas of the county:
> ...
> H. To create noise from construction, between the hours of nine (9:00) p.m. and six (6:00) a.m. on weekdays and nine (9:00) p.m. and eight (8:00) a.m. on weekends, which is audible to a person with average hearing faculties or capacity at a distance of one hundred fifty (150) feet from the construction site, if the construction site is within one thousand (1,000) feet of an occupied residential dwelling except as provided below:
>
> 1. The development services agency director or his designated representative may for good cause exempt some construction work for a limited time.
> 2. Emergency work is exempt from this section.

##### *5.13.2.1.3.2 Kern County General Plan, Noise Element*

The major purpose of the Noise Element is to: (1) establish reasonable standards for maximum desired noise levels in Kern County, and (2) develop an implementation program which could effectively deal with the noise problem. Section 3.2 of the Noise Element identifies the following as noise sensitive land uses: residential areas, schools, convalescent and acute care hospitals, parks and recreational areas, and churches.

The Noise Element of the Kern County General Plan does not establish standards for construction activities. Land use compatibility standards established in the Noise Element for new land uses are not relevant as the GKR Project does not constitute a new land use.

##### *5.13.2.1.3.3 Kern County Airport Land Use Compatibility Plan*

The Kern County Airport Land Use Compatibility Plan establishes procedures and criteria by which the County of Kern and the affected incorporated cities can address compatibility issues when making planning decisions regarding airports and the land uses around them. The Plan serves as a guidance document for the regulation of land uses around the various public use airports found in the County.

*5.13.2.1.3.4 Los Angeles County Code of Ordinances*

Los Angeles County Code Section 12.08.440 states, in relevant part:

> 12.08.440 - Construction noise.
>
> A. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on Sundays or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real-property line, except for emergency work of public service utilities or by variance issued by the health officer is prohibited.
>
> B. Noise Restrictions at Affected Structures. The contractor shall conduct construction activities in such a manner that the maximum noise levels at the affected buildings will not exceed those listed in the following schedule:
>
> 1. At Residential Structures.
>
> a. Mobile Equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment:

| | Single-family Residential | Multi-family Residential | Semiresidential/ Commercial |
|---|---|---|---|
| Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m. | 75dBA | 80dBA | 85dBA |
| Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays | 60dBA | 64dBA | 70dBA |

> 2. At Business Structures.
>
> a. Mobile equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation of mobile equipment:
>
> Daily, including Sunday and legal holidays, all hours: maximum of 85dBA.
>
> C. All mobile or stationary internal-combustion-engine powered equipment or machinery shall be equipped with suitable exhaust and air-intake silencers in proper working order.

To decrease vibration, the ordinance prohibits operating any device that creates vibration that can be felt beyond the property boundary of the source (if on private property) or 150 feet away from the source (if on a public space or public right-of-way). The perception threshold is a motion velocity of 0.01 inches per second over the range of 1 to 100 hertz.

*5.13.2.1.3.5 Los Angeles County General Plan, Noise Element*

The Noise Element of the Los Angeles County General Plan does not establish standards for construction activities. However, the Noise element contains the following goals and policies:

> Goal N 1: The reduction of excessive noise impacts
> Policy N 1.3: Minimize impacts to noise-sensitive land uses by ensuring adequate site design, acoustical construction, and use of barriers, berms, or additional engineering controls through Best Available Technologies (BAT).
>
> Policy N 1.9: Require construction of suitable noise attenuation barriers on noise sensitive uses that would be exposed to exterior noise levels of 65 dBA CNEL and above, when unavoidable impacts are identified.

*5.13.2.1.3.6 City of Arvin General Plan*

The City of Arvin General Plan does not establish standards for construction activities. Land use compatibility standards established in the General Plan for new land uses are not relevant as the GKR Project does not constitute a new land use.

*5.13.2.1.3.7 City of Arvin Municipal Code*

Article II-Nuisances, of Title 9—Public Peace, Morals and Welfare, of the Municipal Code states that "[n]uisances include, but are not limited to, noises that are unreasonably loud, raucous, or jarring to persons within the area of audibility in a residential area" and that occur between 9:00 p.m. and 7:00 a.m. Sunday through Thursday, and between 10:00 p.m. and 8:00 a.m. on Friday and Saturdays.

Section 9.08.060 – Exemptions, notes the following:

> The following acts or conditions are exempt from having to comply with this chapter:
> ...
> F. Any activity to the extent regulation thereof has been preempted by state or federal law.

*5.13.2.1.3.8 City of Bakersfield General Plan*

The Noise Element of the City of Bakersfield General Plan does not establish standards for construction activities. Standards established in the Noise Element for new land uses are not relevant as the GKR Project does not constitute a new land use.

*5.13.2.1.3.9 City of Bakersfield Municipal Code*

Title 9—Public Peace, Morals and Welfare of the Bakersfield Municipal Code addresses noise generated during construction as follows:

> 9.22.050 Noise during construction.
>
> A. Except as provided herein or in subsection B, C or D of this section, it is unlawful for any person, firm or corporation to erect, demolish, alter or repair any building, or to grade or excavate land, streets or highways, other than between the hours of six a.m. and nine p.m. on weekdays, and between eight a.m. and nine p.m. on weekends; provided, however, that city crews and those of the city's contractors performing street work between nine p.m. and six a.m. are exempt herefrom if the city engineer has directed that work be performed between such hours to alleviate potential traffic congestion.
>
> B. Notwithstanding any other provisions of this chapter, if the city manager determines that the public health and safety will not be impaired by the erection, demolition, alteration or repair of any building or the excavating and grading of land, streets or highways between the hours of nine p.m. and six a.m., and if he or she further determines that loss or inconvenience would result to any party in interest by virtue of the requirements provided in subsection A of this section, he or she may grant a permit for such work to be done between the hours of nine p.m. and six a.m., upon application being made at the time the permit for the work is awarded or during the progress of the work. Such permit may be granted for a period not to exceed three days, and may be extended by the city manager for a period not to exceed three days.
>
> C. The provisions of this section shall not apply to any work of construction performed one thousand feet or more from the nearest residential dwelling.
>
> D. The provisions of this section shall not apply to performance of emergency work as defined in this chapter. (Ord. 3924 § 3, 1999)

## 5.13.3 Impact Questions

### *5.13.3.1 Impact Questions*

The significance criteria for assessing the impacts from noise are determined from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would cause:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
- Generation of excessive groundborne vibration or groundborne noise levels
- Exposure of people residing or working in the project area to excessive noise levels for a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport

### *5.13.3.2 Additional CEQA Impact Questions*

There are no CPUC-identified additional CEQA impact questions.

## 5.13.4 Impact Analysis

### *5.13.4.1 Impact Analysis*

#### 5.13.4.1.1 Would the project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

*5.13.4.1.1.1 Construction*

**Less than Significant Impact with Mitigation.** The GKR Project would not result in any permanent increase in ambient noise levels. The GKR Project would result in temporary increases in ambient noise levels.

Within unincorporated Kern County, construction noise would cause a significant impact if it occurs outside of the County's permitted hours of 6:00 a.m. to 9:00 p.m. on weekdays and 8:00 a.m. to 9:00 p.m. on weekends, within 1,000 feet of an occupied residential dwelling. Construction of the GKR Project, when within 1,000 feet of an occupied residential dwelling, would generally occur within the hours designated for construction in the Kern County Code of Ordinances. In the event construction activities are considered necessary outside of what is specified by the Kern County Code of Ordinances, SCE would, per APM NOI-1, provide advance notification of the location where such anticipated activity is expected to be performed. Notification would be provided to the CPUC, Kern County, and to residents within 1,000 feet of the anticipated work. This notification would include a general description of the work to be performed, location, and hours of construction anticipated. Therefore, impacts would be less than significant.

In the City of Bakersfield, a significant impact would occur if construction activities performed within 1,000 feet of a residence would result in a substantial temporary increase in ambient noise levels outside of the City's permissible hours for construction (6:00 a.m. to 9:00 p.m. on weekdays, and 8:00 a.m. to 9:00 p.m. on weekends). Construction of the GKR Project would generally occur within the hours designated for construction in the City of Bakersfield Municipal Code. In the event construction activities within 1,000 feet of a residence are considered necessary outside of what is specified by the Municipal Code, SCE would, per APM NOI-1, provide advanced notification of the location where such anticipated activity is expected to be performed. Notification would be provided to the CPUC, the City, and to residents within 1,000 feet of the anticipated work. This notification would include a general description of the work to be performed, location, and hours of construction anticipated. Therefore, impacts would be less than significant.

The City of Arvin does not have a noise ordinance and noise levels are not established in the City's General Plan. Therefore, there are no established noise level standards and work in the City would not generate noise in excess of established standards.

Noise standards established by Los Angeles County are presented in Table 5.13-1

**Table 5.13-1. Established Noise Standards, Residential Land Uses**

| | Single-family Residential | Multi-family Residential | Semi-residential/ Commercial |
|---|---|---|---|
| Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m. | 75 dBA | 80 dBA | 85 dBA |
| Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays | 60 dBA | 64 dBA | 70 dBA |

For work occurring outside the hours specified by LA County, SCE would, per APM NOI-1, provide advance notification of anticipated work to the CPUC, Los Angeles County, and to residents within 1,000 feet of the anticipated work. This notification would include a general description of the work to be performed, location, and anticipated hours of construction.

At the southern end of Segment 3, a residence is located approximately 130 feet west of Gorman Substation in Los Angeles County. Work in this area would include removal of existing LSTs and poles and installation of new TSPs and LWS poles, and the removal, transfer, and installation of conductor; in addition, a staging area may be established and used in proximity to this residence. Given the distance of this residence from the work locations at Gorman Substation, noise at the residence would exceed the established noise standard for single-family residences in Los Angeles County.

Further, SCE would implement APM NOI-1 and, as needed, other measures (including the temporary relocation of residents during construction). With implementation of this APM and other as-needed measures, impacts would be less than significant.

*5.13.4.1.1.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.13.4.1.2 Would the project generate excessive groundborne vibration or groundborne noise levels?

*5.13.4.1.2.1 Construction*

**No Impact.** Construction activities will generate groundborne vibration from geotechnical drill rigs, excavators, dump trucks, backhoes, and other general construction equipment. For the purposes of this analysis, the Los Angeles County perception threshold of 0.01 in/sec over the range of 1 to 100 Hertz is used as the threshold of significance.

Vibration impacts associated with construction operations would primarily affect those receptors located closest to TSP and LWS pole installation sites, and those located near conductor removal/replacement locations. Table 5.13-2 lists the anticipated levels of ground vibration produced by typical construction equipment.

**Table 5.13-2. Vibration Source Levels for Typical Construction Equipment**

| Equipment | Vibration Level at 50 feet (in/sec) |
|---|---|
| Excavator | 0.007 |
| Backhoe | 0.008 |
| Auger | 0.008 |
| Bulldozer | 0.008 |
| Crane | 0.003 |
| Heavy Truck | 0.007 |

Source: City of Hermosa Beach 2015

Construction activities would occur as near as 40 feet to residences. Screening level analysis indicates the vibration levels associated with these activities would register at a level of less than 0.01 in/sec at the nearest residential structure given the intervening distance. Therefore, groundborne vibration impacts associated with construction activities would not exceed the identified significance threshold at any residence, and there would be no impact under this criterion.

*5.13.4.1.2.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.13.4.1.3 For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

*5.13.4.1.3.1 Construction*

**No Impact.** The GKR Project is not located within the vicinity of a private airstrip or an airport land use plan, or within two miles of a public airport or public use airport. Therefore, there would be no impact under this criterion.

*5.13.4.1.3.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

### *5.13.4.2 Noise Levels*

#### 5.13.4.2.1 Noise Levels for Each Piece of Equipment

Table 5.13-3 identifies each phase of construction, the equipment used in each construction phase, and the length of each phase at any single location.

**Table 5.13-3. Construction Noise Levels**

| Equipment Required | Equipment Noise Level (Leq; 50 feet) | Phase Noise Level (Leq; 50 feet) | Phase Duration at Each Location | Receptor Nearest to Construction Phase | Noise Level at Nearest Receptor (Leq) | Exceeds Noise Standard at Nearest Receptor? | Distance to Not Exceed Standard |
|---|---|---|---|---|---|---|---|
| **Survey** | | | | | | | |
| 1-Ton Truck, 4x4 | 80 | 80 | 1 day | Residence, 127 feet from work areas near Gorman Substation | 72 | No | IR |
| **Staging Area** | | | | | | | |
| 1-Ton Truck, 4x4 | 80 | 92 | 180 days | None | N/A | N/A | N/A |
| R/T Forklift | 85 | | | | | | |
| Boom/Crane Truck | 85 | | | | | | |
| Water Truck | 84 | | | | | | |
| Jet A Fuel Truck | 84 | | | | | | |
| Truck, Semi-Tractor | 84 | | | | | | |
| **Road Work** | | | | | | | |
| 1-Ton Truck, 4x4 | 80 | 93 | 1 day | Residence, 127 feet from work areas near Gorman Substation | 85 | Yes | IR |
| Backhoe/Front Loader | 80 | | | | | | |
| Track Type Dozer | 85 | | | | | | |
| Motor Grader | 85 | | | | | | |
| Water Truck | 84 | | | | | | |
| Drum Type Compactor | 85 | | | | | | |
| Excavator | 85 | | | | | | |
| Lowboy Truck/Trailer | 84 | | | | | | |
| **TSP Foundation** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 80 | 92 | 2 days | Residence, 127 feet from work areas near Gorman Substation | 84 | Yes | IR |
| Boom/Crane Truck | 85 | | | | | | |
| Backhoe/Front Loader | 80 | | | | | | |
| Auger Truck | 84 | | | | | | |
| Water Truck | 84 | | | | | | |
| Dump Truck | 84 | | | | | | |
| Concrete Mixer Truck | 85 | | | | | | |
| **TSP Haul** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 80 | 90 | ¼ day | Residence, 127 feet from work areas near Gorman Substation | 82 | Yes | IR |
| Boom/Crane Truck | 85 | | | | | | |
| Flat Bed Pole Truck | 84 | | | | | | |

**Table 5.13-3. Construction Noise Levels**

| Equipment Required | Equipment Noise Level (Leq; 50 feet) | Phase Noise Level (Leq; 50 feet) | Phase Duration at Each Location | Receptor Nearest to Construction Phase | Noise Level at Nearest Receptor (Leq) | Exceeds Noise Standard at Nearest Receptor? | Distance to Not Exceed Standard |
|---|---|---|---|---|---|---|---|
| Water Truck | 84 | | | | | | |
| **TSP Assembly** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 80 | 89 | 1 day | Residence, 127 feet from work areas near Gorman Substation | 81 | Yes | IR |
| 1-Ton Truck, 4x4 | 80 | | | | | | |
| Water Truck | 84 | | | | | | |
| Compressor Trailer | 65 | | | | | | |
| Boom/Crane Truck | 85 | | | | | | |
| **TSP Erection** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 80 | 98 | 1 day | Residence, 127 feet from work areas near Gorman Substation | 90 | Yes | IR |
| 1-Ton Truck, 4x4 | 80 | | | | | | |
| Water Truck | 84 | | | | | | |
| Compressor Trailer | 65 | | | | | | |
| R/T Crane | 85 | | | | | | |
| Heavy-duty Helicopter | 97 | | | | | | |
| **LWS Pole Haul** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 80 | 90 | ¼ day | Residence, 470 feet | 71 | Yes | IR |
| Water Truck | 84 | | | | | | |
| Boom/Crane Truck | 85 | | | | | | |
| Flat Bed Pole Truck | 84 | | | | | | |
| **LWS Pole Assembly** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 80 | 89 | ¼ day | Residence, 470 feet | 70 | Yes | IR |
| Compressor Trailer | 65 | | | | | | |
| 1-Ton Truck, 4x4 | 80 | | | | | | |
| Water Truck | 84 | | | | | | |
| Boom/Crane Truck | 85 | | | | | | |
| **Install LWS Pole** | | | | | | | |
| 1-Ton Truck, 4x4 | 80 | 98 | ¼ day | Residence, 470 feet | 79 | Yes | IR |
| Manlift/Bucket Truck | 85 | | | | | | |
| Boom/Crane Truck | 85 | | | | | | |
| Auger Truck | 84 | | | | | | |
| Water Truck | 84 | | | | | | |
| Backhoe/Frontloader | 80 | | | | | | |

### Table 5.13-3. Construction Noise Levels

| Equipment Required | Equipment Noise Level (Leq; 50 feet) | Phase Noise Level (Leq; 50 feet) | Phase Duration at Each Location | Receptor Nearest to Construction Phase | Noise Level at Nearest Receptor (Leq) | Exceeds Noise Standard at Nearest Receptor? | Distance to Not Exceed Standard |
|---|---|---|---|---|---|---|---|
| Extendable Flat Bed Pole Truck | 84 | | | | | | |
| Medium-duty Helicopter | 97 | | | | | | |
| **Existing Pole Removal** | | | | | | | |
| 1-Ton Truck, 4x4 | 80 | 91 | ¼ day | Residence, 127 feet from work areas near Gorman Substation | 83 | Yes | IR |
| Compressor Trailer | 65 | | | | | | |
| Manlift/Bucket Truck | 85 | | | | | | |
| Boom/Crane Truck | 85 | | | | | | |
| Flat Bed Pole Truck | 84 | | | | | | |
| Water Truck | 84 | | | | | | |
| **Existing Lattice Structure/TSP Removal** | | | | | | | |
| 1-Ton Truck, 4x4 | 80 | 99 | 2 days | Residence, 127 feet from work areas near Gorman Substation | 91 | Yes | IR |
| Compressor Trailer | 65 | | | | | | |
| Manlift/Bucket Truck | 85 | | | | | | |
| Backhoe/Front Loader | 80 | | | | | | |
| Boom/Crane Truck | 85 | | | | | | |
| Flat Bed Pole Truck | 84 | | | | | | |
| Water Truck | 84 | | | | | | |
| Medium-duty Helicopter | 97 | | | | | | |
| Dump Truck | 84 | | | | | | |
| Excavator | 85 | | | | | | |
| R/T Crane (M) | 85 | | | | | | |
| R/T Crane (L) | 85 | | | | | | |
| **Remove Conductor and OHGW** | | | | | | | |
| 1-Ton Truck, 4x4 | 80 | 93 | 20 days | Residence, 127 feet from work areas near Gorman Substation | 85 | Yes | IR |
| Manlift/Bucket Truck | 85 | | | | | | |
| Sleeving Truck | 84 | | | | | | |
| R/T Crane | 85 | | | | | | |
| Flatbed Trailer | 0 | | | | | | |
| Truck, Semi-tractor | 84 | | | | | | |
| Bull Wheel Puller | 84 | | | | | | |
| Water Truck | 84 | | | | | | |
| Hydraulic Rewind Puller | 84 | | | | | | |

**Table 5.13-3. Construction Noise Levels**

| Equipment Required | Equipment Noise Level (Leq; 50 feet) | Phase Noise Level (Leq; 50 feet) | Phase Duration at Each Location | Receptor Nearest to Construction Phase | Noise Level at Nearest Receptor (Leq) | Exceeds Noise Standard at Nearest Receptor? | Distance to Not Exceed Standard |
|---|---|---|---|---|---|---|---|
| **Install Conductor and OPGW/OHGW** | | | | | | | |
| ¾-Ton Truck, 4x4 | 80 | 97 | 20 days | Residence, 127 feet from work areas near Gorman Substation | 89 | Yes | IR |
| 1-Ton Truck, 4x4 | 80 | | | | | | |
| Wire Truck/Trailer | 84 | | | | | | |
| R/T Crane | 85 | | | | | | |
| Dump Truck | 84 | | | | | | |
| Bucket Truck | 85 | | | | | | |
| 22-Ton Manitex | 85 | | | | | | |
| Splicing Rig | 84 | | | | | | |
| Splicing Lab | 84 | | | | | | |
| Sock Line Puller | 84 | | | | | | |
| Bull Wheel Puller | 84 | | | | | | |
| Backhoe/Front Loader | 80 | | | | | | |
| D8 Caterpillar | 82 | | | | | | |
| Light-duty Helicopter | 90 | | | | | | |
| Fuel, Helicopter Support Truck | 84 | | | | | | |
| Sag Cat with 2 winches | 82 | | | | | | |
| Static Truck/Tensioner | 84 | | | | | | |
| **Install Guard Structures** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 80 | 92 | ½ day | N/A; no guard structures to be installed in Los Angeles County | 80 | Yes | IR |
| 1-Ton Truck, 4x4 | 80 | | | | | | |
| Compressor Trailer | 65 | | | | | | |
| Backhoe/Front Loader | 80 | | | | | | |
| Water Truck | 84 | | | | | | |
| Manlift/Bucket Truck | 85 | | | | | | |
| Boom/Crane Truck | 85 | | | | | | |
| Auger Truck | 84 | | | | | | |
| Extendable Flat Bed Pole Truck | 84 | | | | | | |
| **Remove Guard Structures** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 80 | 92 | ½ day | N/A; no guard structures to be | 80 | Yes | IR |
| 1-Ton Truck, 4x4 | 80 | | | | | | |
| Compressor Trailer | 65 | | | | | | |

**Table 5.13-3. Construction Noise Levels**

| Equipment Required | Equipment Noise Level (Leq; 50 feet) | Phase Noise Level (Leq; 50 feet) | Phase Duration at Each Location | Receptor Nearest to Construction Phase | Noise Level at Nearest Receptor (Leq) | Exceeds Noise Standard at Nearest Receptor? | Distance to Not Exceed Standard |
|---|---|---|---|---|---|---|---|
| Backhoe/Front Loader | 80 | | | installed in Los Angeles County | | | |
| Water Truck | 84 | | | | | | |
| Manlift/Bucket Truck | 85 | | | | | | |
| Boom/Crane Truck | 85 | | | | | | |
| Auger Truck | 84 | | | | | | |
| Extendable Flat Bed Pole Truck | 84 | | | | | | |
| **Restoration** | | | | | | | |
| 1-Ton Truck, 4x4 | 80 | 91 | 1 day | Residence, 127 feet from work areas near Gorman Substation | 83 | Yes | IR |
| Backhoe/Front Loader | 80 | | | | | | |
| Motor Grader | 85 | | | | | | |
| Water Truck | 84 | | | | | | |
| Drum Type Compactor | 85 | | | | | | |
| Lowboy Truck/Trailer | 84 | | | | | | |

NOTE: There are no established noise level standards applicable to Project-related construction activities in unincorporated Kern County, the City of Arvin, or the City of Bakersfield; therefore, work in these jurisdictions would not generate noise in excess of established standards and work in these areas is not addressed in this Table. Only work in Los Angeles County is accounted for here.

IR. SCE cannot relocate its structures, nor can SCE relocate a noise sensitive receptor or land use.

Page intentionally left blank.

#### 5.13.4.2.2 Estimated Cumulative Equipment Noise Levels

Estimated cumulative equipment noise levels are presented in Table 5.13-3.

#### 5.13.4.2.3 Phases of Operation

There are no separate phases of operation of the infrastructure to be installed under the GKR Project; noise generated during operation of the GKR Project would not exceed the levels of pre-project existing noise generated currently along the GKR Project.

#### 5.13.4.2.4 Manufacturer's Specifications for Equipment

The specific models of construction equipment to be used during construction and operation of the GKR Project are not known at this time; therefore, the manufacturer's specifications for such equipment cannot be provided at this time. Equipment equipped by the manufacturer with noise-control equipment will be operated with said noise-control equipment. If requested by the CPUC, SCE will provide the manufacturer's specifications for specific models of construction equipment at the time such construction equipment is identified.

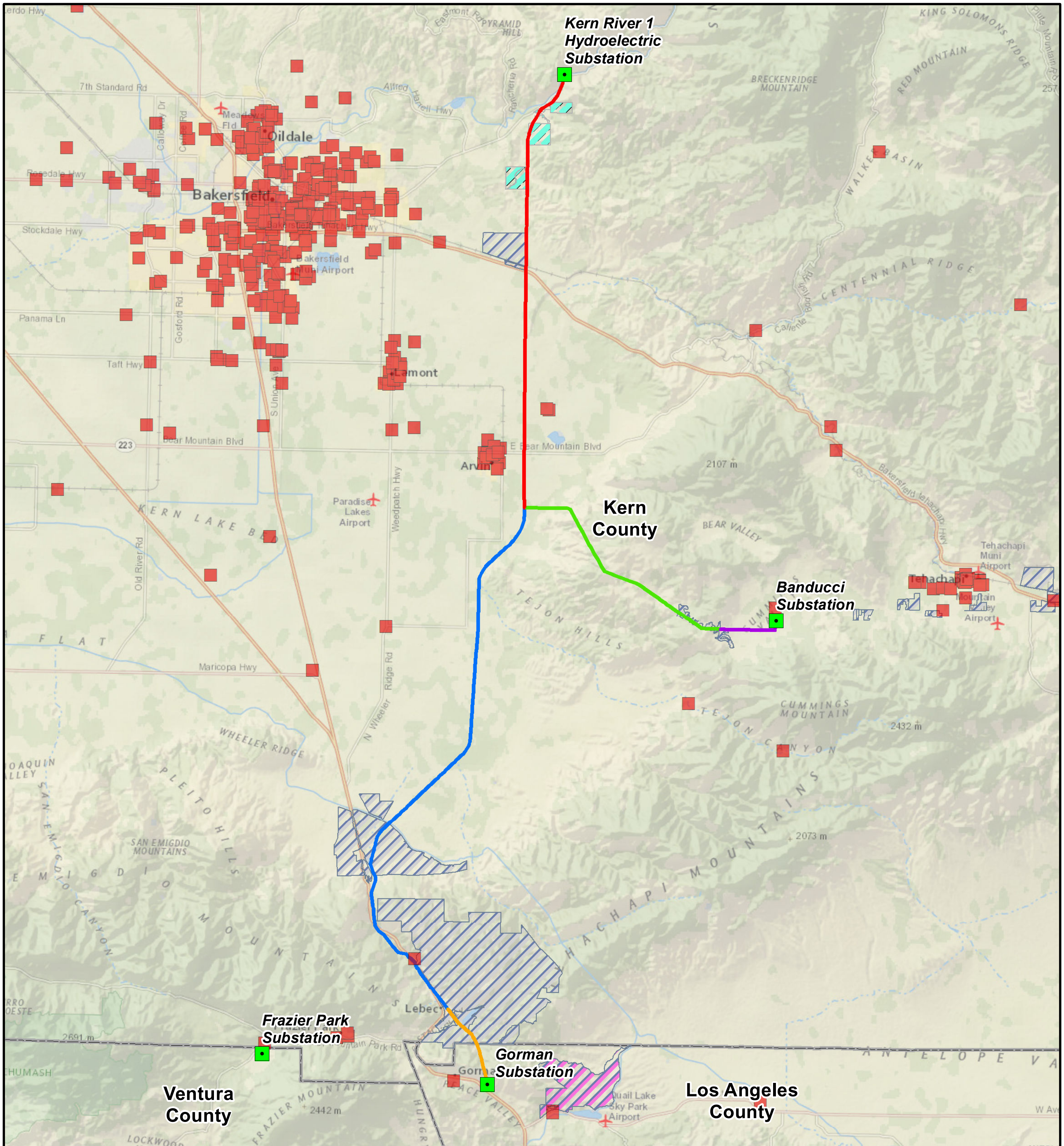
#### 5.13.4.2.5 Approaches to Reduce Impacts from Noise

SCE has designed and incorporated APM NOI-1 into the GKR Project to minimize potential impacts to noise sensitive receptors.

### 5.13.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for the Noise resource area.

Page intentionally left blank.




## Legend

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Potential Sensitive Receptors
- City of Bakersfield Residential
- Kern County Residential
- Los Angeles County Residential
- Counties

N

0 10
Miles

# GORMAN-KERN RIVER 66 kV PROJECT

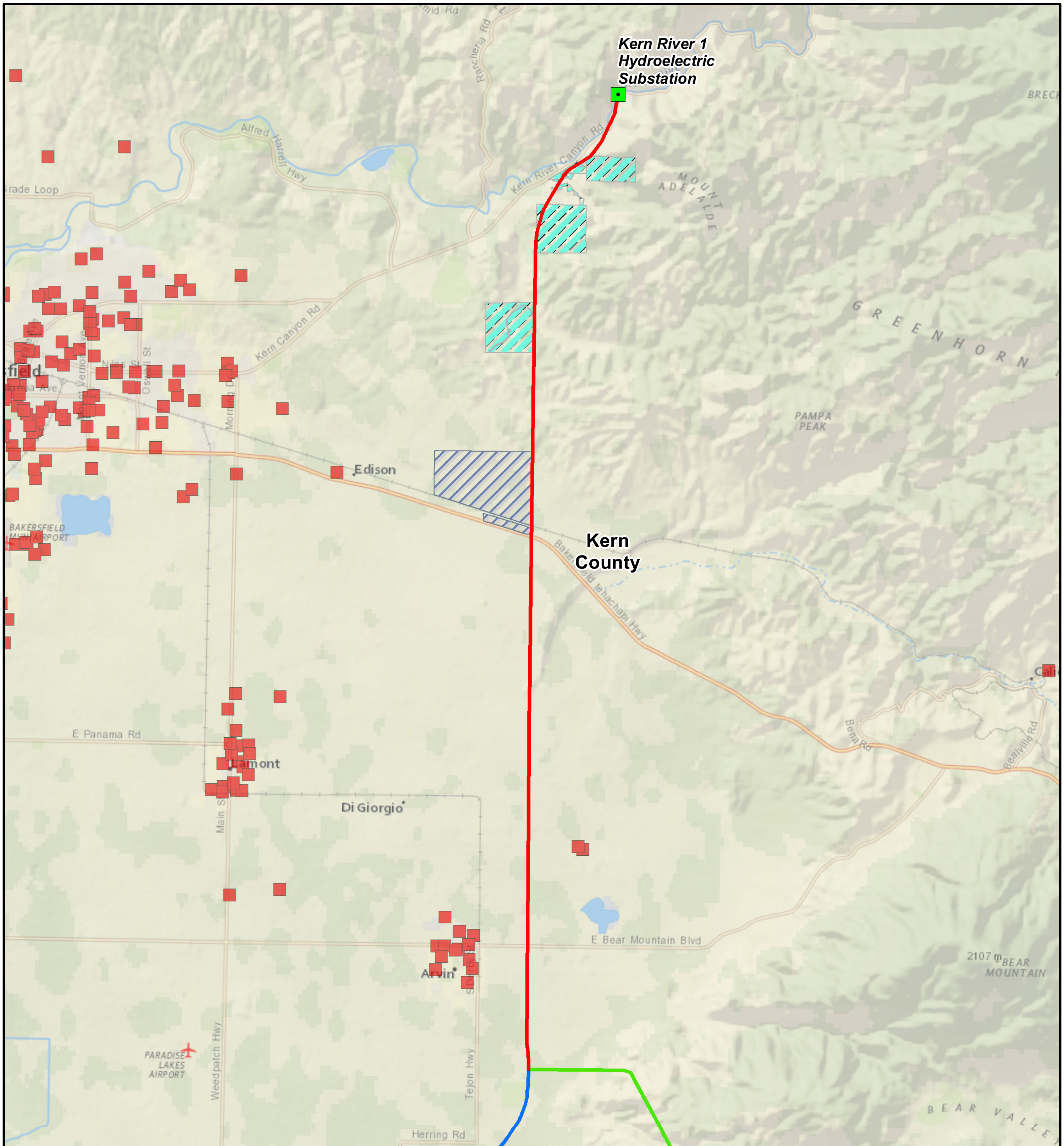
# SENSITIVE RECEPTORS

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURESET
5.13-1.a

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-13-1_SensitiveReceptors_KERN.mxd 6/15/2021




**Legend**

- Substation
- Segment 1
- Segment 2
- Segment 4
- Potential Sensitive Receptors
- City of Bakersfield Residential
- Kern County Residential
- Counties

N

0 4
Miles

# GORMAN-KERN RIVER 66 kV PROJECT

# SENSITIVE RECEPTORS

ARCADIS SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company

FIGURESET
5.13-1.b

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-13-1_SensitiveReceptors_KERN.mxd 6/15/2021


**Legend**

- Substation
- Segment 1
- Segment 2
- Segment 4
- Segment 5
- Potential Sensitive Receptors
- Kern County Residential
- Counties

N

0 2.8
Miles

# GORMAN-KERN RIVER 66 kV PROJECT

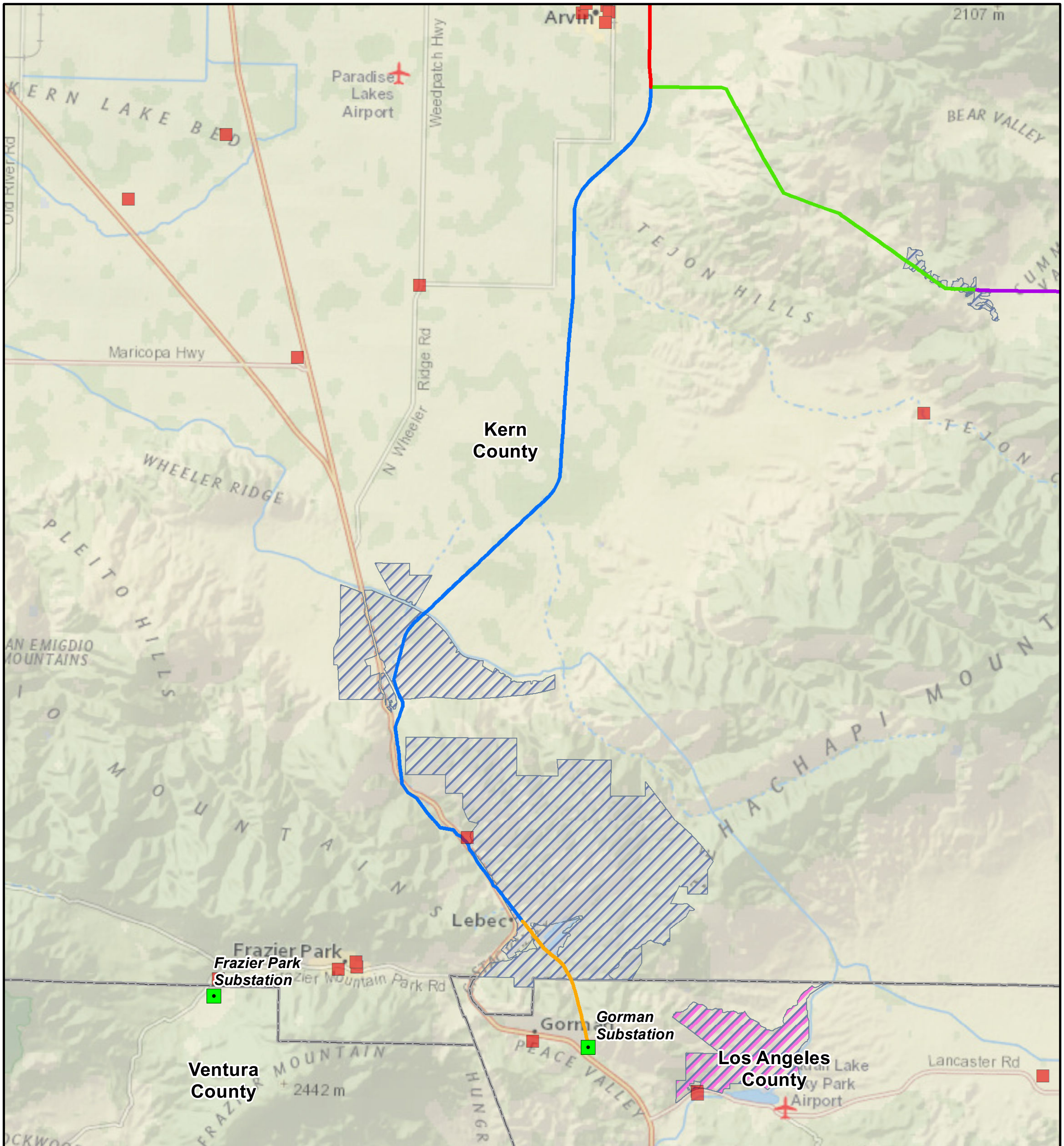
## SENSITIVE RECEPTORS

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURESET
5.13-1.c

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-13-1_SensitiveReceptors_KERN.mxd 6/15/2021




## Legend

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Potential Sensitive Receptors
- Kern County Residential
- Los Angeles County Residential
- Counties

N

0 6

Miles

# GORMAN-KERN RIVER 66 kV PROJECT

# SENSITIVE RECEPTORS

ARCADIS

SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

FIGURESET

5.13-1.d

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-13-1_SensitiveReceptors_KERN.mxd 6/15/2021

# 5.14 Population and Housing

This Section of the PEA describes the population and housing in the area of the GKR Project, as well as the potential impacts.

## 5.14.1 Environmental Setting

### *5.14.1.1 Population Estimates*

The GKR Project traverses unincorporated areas of Kern and Los Angeles counties, the City of Arvin, and the City of Bakersfield; the GKR Project alignment does not cross any Reservation lands. The GKR Project alignment crosses the Lebec Census-Designated Place (CDP) and the Stallion Springs CDP. Figure 5.14-1 illustrates the location of these areas with respect to the GKR Project alignment.

Population and housing data are presented in the following sections for these areas. Historical population and housing data presented below were obtained from U.S. Census Bureau decadal censuses. Population projections were obtained from the California Department of Finance.

#### 5.14.1.1.1 Population Profile

The historical and projected future populations of cities and counties in the GKR Project area are presented in Table 5.14-1. The Planning Division of the City of Bakersfield projects that the City of Bakersfield population will grow by approximately 45.4 percent over the 2010-2030 period. Population projections are not available for the City of Arvin. The California Department of Finance projects that the Kern County population will grow by approximately 11.6 percent over the 2020 to 2030 period. The California Department of Finance projects that the Los Angeles County population will increase by approximately 1.5 percent over the 2020 to 2030 period.

**Table 5.14-1. Population and Housing**

| | Kern County | Los Angeles County | City of Arvin | City of Bakersfield | Lebec CDP | Stallion Springs CDP |
|---|---|---|---|---|---|---|
| Population, 2010 | 839,631 | 9,818,605 | 19,304 | 347,483 | 1,468 | 2,488 |
| Population, 2019 | 839,631 | 9,818,605 | 21,249 | 377,917 | 1,472 | 3,581 |
| Pop. Below Poverty Level, 2019 (%) | 19.1 | 13.4 | 30 | 17.4 | 14.1 | 18.2 |
| Housing, Total | 298,117 | 3,542,800 | 5,130 | 124,478 | 735 | 1,400 |
| Housing, Occupied | 270,282 | 3,316,795 | 4,864 | 117,050 | 644 | 1,231 |
| Housing, Vacant | 27,835 | 226,005 | 266 | 7,428 | 91 | 169 |
| Rental Vacancy Rate (%) | 5.2 | 3.4 | 1.6 | 4.6 | 0 | 0 |

### *5.14.1.2 Housing Estimates*

Data on the number of housing units and rental vacancy rates for each of the locations is presented in Table 5.14-1. Short-term lodging is available at numerous hotels and motels in the City of Bakersfield, City of Tehachapi, and in the vicinity of the community of Lebec.

### *5.14.1.3 Approved Housing Developments*

Approved housing developments have been identified in unincorporated Kern County and unincorporated Los Angeles County, and a zoning change has been approved in the City of Arvin that foretells approval of new housing development; these are described in the sections immediately below. No housing developments have been identified in the City of Bakersfield within one mile of the GKR Project alignment or any component of the GKR Project.

##### 5.14.1.3.1 Kern County Approved Housing Development—Grapevine Specific and Community Plan

The project is an 8,010-acre master planned community located at the southern end of the San Joaquin Valley adjacent to the existing Tejon Ranch Commerce Center. It would provide a new residential community and employment center that would extend the range of economic development opportunities that currently exist in the Tejon Ranch Commerce Center and would provide options for housing and services for the existing employees of both the project site and the adjacent Tejon Ranch Commerce Center. The project involves entitlements that would allow for 12,000 dwelling units; an additional 2,000 dwelling units may be permitted. Development was approved in December 2019; construction schedule is unknown.

##### 5.14.1.3.2 Los Angeles County Approved Housing Development—Centennial Specific Plan

The Centennial Specific Plan was adopted by the Los Angeles County Board of Supervisors on April 30, 2019 and became effective on May 30, 2019. The Specific Plan authorizes the development of a new master-planned community of 19,333 residences. Development was approved in April 2019; construction schedule is unknown.

##### 5.14.1.3.3 City of Arvin—General Plan Amendment 2013-01/Zone Change

This project entails a general plan amendment from Light Industrial and Heavy Industrial and zone change from A-1, Light Agricultural and A-2 General Agricultural to Land Use Designations and Zoning as follows: General Commercial with C-2-PD General Commercial zoning for 21.32 Acres, and Medium Density Residential with R-2-PD Two Family zoning for 27.17 Acres; High Density Residential with R-3-PD Limited Multiple Family zoning for 7.15 Acres; and R-4-PD zoning for 6.01 Acres - Project consists of 62 acres located south of Sycamore Road, east of Tejon Highway (Derby St.) and west of Malovich Road in the City of Arvin. While this project entails only a general plan amendment and zone change, residential development of this area is reasonably foreseeable, although the timing of said development is unknown.

### 5.14.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the GKR Project.

#### *5.14.2.1 Regulatory Setting*

##### 5.14.2.1.1 Federal

There are no applicable federal regulations for population and housing that apply to the GKR Project.

##### 5.14.2.1.2 State

There are no applicable state regulations for population and housing that apply to the GKR Project.

##### 5.14.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the GKR Project. Pursuant to GO 131-D, Section XIV.B, “Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC’s jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters.” Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities’ regulations are not applicable as the county and cities do not have jurisdiction over the GKR Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only. However, there are no applicable regulations for population and housing that apply to the GKR Project.

## 5.14.3 Impact Questions

### *5.14.3.1 Impact Questions*

The significance criteria for assessing the impacts to population and housing are derived from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Induce substantial unplanned population growth in the area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through the extension of new roads or other infrastructure)
- Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere

### *5.14.3.2 Additional CEQA Impact Questions*

There are no CPUC-identified additional CEQA impact questions.

## 5.14.4 Impact Analysis

### *5.14.4.1 Impact Analysis*

#### 5.14.4.1.1 Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

*5.14.4.1.1.1 Construction*

**No Impact.** The GKR Project would not induce, either directly or indirectly, substantial unplanned population growth in the area. SCE expects to utilize approximately 85 workers per day. The labor demands of the GKR Project would be met by existing SCE employees or by hiring specialty electrical transmission contractors. Given the small number of positions required for construction of the GKR Project and the short term of the construction period in any given location, no population growth would be induced by the rebuilding of the subtransmission lines.

The GKR Project would not indirectly induce an increase in population. The GKR Project is designed to remediate GO 95 clearance discrepancies; it will not provide new or upgraded electrical service to the area around the GKR alignment. In addition, the GKR Project does not include any new infrastructure such as publicly accessible roads that could induce population growth. Therefore, no impacts would occur under this criterion as a result of the GKR Project.

*5.14.4.1.1.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.14.4.1.2 Would the GKR Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

*5.14.4.1.2.1 Construction*

**No Impact.** The GKR Project would not displace any existing housing. The existing subtransmission lines included under the GKR Project are located primarily within SCE's existing ROW or immediately adjacent to the existing ROW. No housing would be displaced, and thus it would not be necessary to construct replacement housing elsewhere.

*5.14.4.1.2.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

### *5.14.4.2 Impacts to Housing*

No existing homes occur within the footprint of any proposed GKR Project elements or ROW; the elements of the GKR Project would be constructed primarily within SCE's existing ROW, and therefore no homes could be proposed in those areas. No housing impacts (e.g., demolition and relocation of residents) would occur as a result of the GKR Project.

### *5.14.4.3 Workforce Impacts*

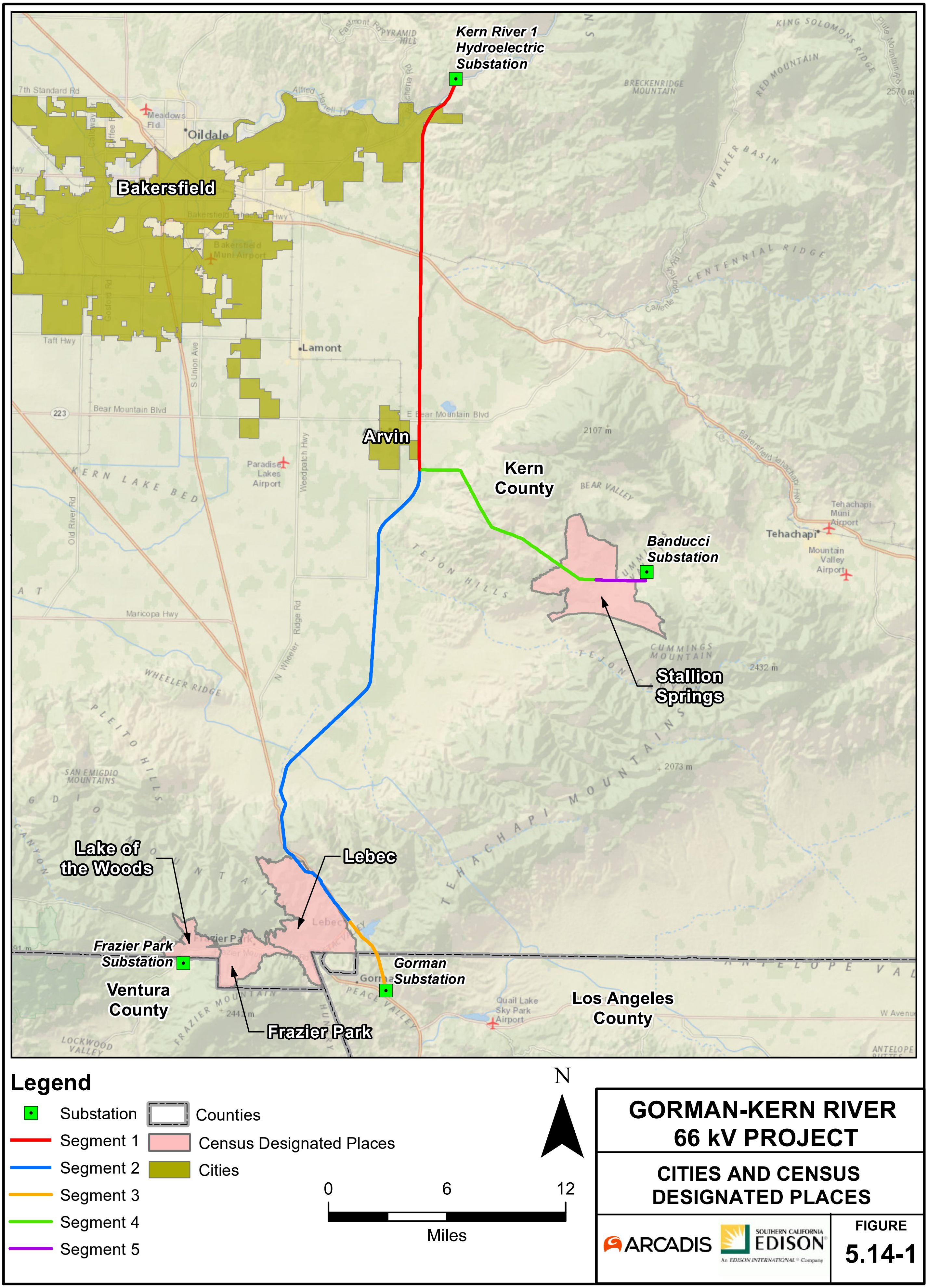
SCE expects to utilize approximately 85 workers per day to support this proposed project. The numbers of construction personnel that may work on the GKR Project and who currently reside within the impact area is unknown and unknowable, as are the numbers of construction personnel who would commute daily to the site from outside the impact area or who would relocate temporarily within the impact area. No permanent employment opportunities would be created by the GKR Project.

### *5.14.4.4 Population Growth Inducing*

Information regarding the GKR Project's growth inducing impacts are addressed in Section 7.2.1.

## 5.14.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for the Population and Housing resource area.




T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-14-1_Cities_Census_and_DesignatedPlaces.mxd 06/16/2021

# 5.15 Public Services

This Section of the PEA describes public services in the area of the GKR Project, as well as the potential impacts resulting from construction and operation of the GKR Project.

## 5.15.1 Environmental Setting

### *5.15.1.1 Service Providers*

#### 5.15.1.1.1 Police

The Kern County Sheriff's Office (KCSO) provides police services in unincorporated Kern County. The KCSO employs over 1,400 people and has 14 stations and serves over 700,000 people in Kern County (KCSO 2017). The KCSO strives for an average response time of five minutes or less for an emergency or immediate response incident (e.g., a crime that is under way and/or a life-or-death situation) and 8 to 10 minutes for routine calls (e.g., a crime that has already occurred and/or an incident that is not life-threatening) (Kern County 2019).

There are no Los Angeles County Sheriff Department stations within 20 miles of the GKR Project alignment in Segments 3 and 4. Table 5.15-1 provides a list of substations in proximity to the GKR Project.

**Table 5.15-1. Kern County Sheriff's Office Stations in Proximity to the GKR Project Alignment**

| Project Segment(s) | Name | Address | Approximate Distance to GKR Project Alignment |
|---|---|---|---|
| 2, 3 | Lamont Station | 12022 Main Street, Lamont | 6.2 miles |
| 3 | Frazier Park Station | 617 Monterey Trail - Suite C, Frazier Park | 4.6 miles |
| 5 | Tehachapi Station | 22209 Old Town Road, Tehachapi | 2.2 miles |

Portions of the GKR Project alignment are located in the cities of Arvin and Bakersfield. Table 5.15-2 provides information related to the police stations located within the vicinity of the GKR Project. Response times for the Arvin police department is not available; response times for the Bakersfield Police Department are less than 7 minutes city-wide (Douglas 2015).

**Table 5.15-2. Police Departments within the GKR Project Area**

| Project Segment(s) | Name | Address | Approximate Distance to GKR Project Alignment |
|---|---|---|---|
| 1 | Arvin Police Department | 200 Campus Drive, Arvin | 1.5 miles |
| 1 | Bakersfield Police Department | 1601 Truxtun Avenue, Bakersfield | 12 miles |

#### 5.15.1.1.2 Fire

The Kern County Fire Department (KCFD), Los Angeles County Fire Department, and the Bakersfield Fire Department provide fire protection services for the GKR Project area. The KCFD serves a population of more than 500,000 people and an area of more than 8,000 square miles. The KCFD has more than 546 uniformed firefighters and operates out of 46 fire stations throughout Kern County (KCFD 2017). The Bakersfield Fire Department provides services within the City boundaries from fourteen fire stations. Response times in Kern County vary: in the Bakersfield Joint Powers Area, response time averages 8.4 minutes. In urban areas, response time averages 8.3 minutes. In rural and remote areas, response times average 10.8 and 21 minutes, respectively (Center for Public Safety Management LLC, undated).

The Los Angeles County Fire Department provides fire, safety, and emergency medical services to the unincorporated areas of the county. The Los Angeles County Fire Department serves a population of more than 4 million people in an area of more than 2,300 square miles. The Los Angeles County Fire Department has more than 658 uniformed firefighters and operates 173 fire station throughout Los Angeles County (Los Angeles County Fire Department 2016). Response time for the Los Angeles County Fire Department in urban areas is approximately 6 minutes; longer response times are expected to be realized in rural or remote areas (County of Los Angeles, undated).

**Table 5.15-3. Fire Stations in Proximity to the GKR Project Alignment**

| Project Segments | Name | Location | County | Approximate Distance to GKR Project Alignment |
|---|---|---|---|---|
| 1 | Edison – Fire Station #45 | 11809 Edison Highway, Bakersfield | Kern | 3.7 miles |
| 1 | Arvin – Fire Station #54 | 301 Campus Drive, Arvin | Kern | 1.5 miles |
| 1 | Lamont – Fire Station #51 | 8225 McKee Road, Lamont | Kern | 5.9 miles |
| 2, 3 | Tejon Ranch – Fire Station #55 | 5441 Dennis McCarthy Drive, Lebec | Kern | 3.1 miles |
| 2, 3 | Lebec – Fire Station #56 | 1545 Lebec Service Road, Lebec | Kern | 0.5 miles |
| 3 | Gorman – Fire Station #77 | 46833 Peace Valley Road, Gorman | Los Angeles | 2.8 miles |
| 4, 5 | Bear Valley – Station #16 | 28946 Bear Valley Road, Tehachapi | Kern | 4.5 miles |
| 4, 5 | Stallion Springs – Station #18 | 28381 Braeburn Place #22, Stallion Springs | Kern | 0.8 miles |

#### 5.15.1.1.3 Schools

The GKR Project alignment crosses seven school districts within Kern County (Kern County Superintendent of Schools [KCSS 2017]). The portion of the GKR Project alignment in Los Angeles County is located in the Antelope Valley Union District; there are no schools near the GKR Project alignment in this district. Table 5.15-4 provides an overview of the schools, locations, district, grades, as well as the approximate distance of each school that is proximate to the GKR Project alignment.

**Table 5.15-4. Schools in Proximity to the GKR Project**

| Project Segments | Name | Address | School District | Grades | Approximate Distance to the GKR Project Alignment |
|---|---|---|---|---|---|
| 1 | Di Giorgio Elementary School | 19405 Buena Vista Boulevard, Arvin | Di Giorgio Elementary | K-8 | 1.1 miles |
| 1 | Haven Drive Middle School | 341 Haven Drive, Arvin | Arvin Union Elementary | 7-8 | 1.1 miles |
| 1 | Sierra Vista Elementary School | 300 Franklin St. Arvin | Arvin Union Elementary | P-6 | 1.1 miles |
| 3 | El Tejon School | 4337 Lebec Road Lebec | El Tejon Unified | 5-8 | 0.01 miles |

#### 5.15.1.1.4 Parks

The Kern County Parks and Recreation Department manages approximately 4,726 acres of parks and open space (Kern County 2010). A number of parks and recreational areas are located in the vicinity of the GKR Project; public parks, open spaces, and recreational areas in the vicinity of the GKR Project components are described in detail in Section 5.16, Recreation.

#### 5.15.1.1.5 Hospitals

The closest major hospital to the GKR Project alignment is the Tehachapi Hospital which is located approximately 9 miles east of the existing SCE Banducci Substation at 115 West East Street, Tehachapi. Several hospitals are located in and around the City of Bakersfield at a distance of greater than 10 miles from the GKR Project alignment. These hospitals are depicted in Figureset 5.15-1.

## 5.15.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the GKR Project.

### *5.15.2.1 Regulatory Setting*

#### 5.15.2.1.1 Federal

##### *5.15.2.1.1.1 United States Forest Service*

No Federal regulations related to public services are applicable to the GKR Project.

#### 5.15.2.1.2 State

##### *5.15.2.1.2.1 California Fire Code*

The California Code of Regulations (CCR), Title 24, Part 9 is known as the California Fire Code. This code provides provisions for planning, precautions, and preparations for fire safety and fire protection during various activities, including, but not limited to, construction and demolition, as well as requirements for buildings and guidelines for working with flammable chemicals and materials. The GKR Project is located in areas that range from moderate, high, to very high fire hazard potential (CAL FIRE 2007). As such, the California Fire Code was reviewed for this analysis.

##### *5.15.2.1.2.2 California Public Resources Code Sections 4292 and 4293*

California Public Resources Code (CPRC) Section 4292 states:

> [A]ny person that owns, controls, operates, or maintains any electrical transmission or distribution line…shall, during such times and in such areas as are determined to be necessary by the director or the agency, has primary responsibility for fire protection of such areas, maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightening arrester, line junction, or dead end or corner pole, a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of such a pole or tower (CPRC 4292).

CPRC Section 4293 states:

> [A]ny person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or in forest-covered land, or grass-covered land shall, during such times and in such areas as are determined to be necessary by the director or the agency which has primary responsibility for the fire protection of such area, maintain a clearance of the respective distances which are specified in this section in all directions between all vegetation and all conductors which are carrying electric current:
>
> (a) For any line which is operating at 2,400 or more volts, but less than 72,000 volts, four feet
>
> (b) For any line which is operating at 72,000 or more volts, but less than 110,000 volts, six feet
>
> (c) For any line which is operating at 110,000 or more volts, 10 feet

> In every case, such distance shall be sufficiently great to furnish the required clearance at any position of the wire, or conductor when the adjacent air temperature is 120 degrees Fahrenheit, or less. Dead trees, old decadent or rotten trees, trees weakened by decay or disease and trees or portions thereof that are leaning toward the line which may contact the line from the side or may fall on the line shall be felled, cut, or trimmed so as to remove such hazard (CPRC 4293).

*5.15.2.1.2.3 Red Flag Fire Warning and Weather Watches*

Like CPRC Sections 4292 and 4293, red-flag warnings and fire-weather watches aim to prevent fire events and reduce the potential for substantial damage. When extreme fire weather or behavior is present or predicted in an area, a red-flag warning or fire-weather watch may be issued to advise local fire agencies that these conditions are present.

#### 5.15.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the GKR Project. Pursuant to GO 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the GKR Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

*5.15.2.1.3.1 Kern County General Plan*

Kern County recognizes the importance of environmental and public health and has developed policies to protect the public health and safety in the Kern County General Plan. Kern County has policies that encourage availability of adequate emergency services and facilities to the residents of Kern County through the coordination, planning, and development of emergency facilities and services. The Safety Element of the Kern County General Plan does not contain any specific goals or policies that are relevant to the GKR Project (Kern County 2009).

*5.15.2.1.3.2 Los Angeles County General Plan*

The Los Angeles County General Plan does not contain any specific goals or policies relevant to the GKR Project.

*5.15.2.1.3.3 City of Arvin General Plan*

The City of Arvin General Plan does not contain any specific goals or policies relevant to the GKR Project.

*5.15.2.1.3.4 City of Bakersfield General Plan*

The City of Bakersfield General Plan does not contain any specific goals or policies relevant to the GKR Project.

## 5.15.3 Impact Questions

### *5.15.3.1 Impact Questions*

The significance criteria for assessing the impacts to public services are derived from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

- fire protection
- police protection
- schools
- parks
- other public facilities

### *5.15.3.2 Additional CEQA Impact Questions*

There are no CPUC-identified additional CEQA impact questions.

## 5.15.4 Impact Analysis

### *5.15.4.1 Impact Analysis*

#### 5.15.4.1.1 Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

*5.15.4.1.1.1 Construction*

**No Impact.** The GKR Project would not affect service ratios, response times, or other objectives for public services in the area. Fire, emergency and police services currently serve, and would continue to serve, the areas in which the existing and rebuilt subtransmission lines are located.

The GKR Project would not require the expansion of fire protection services. Work areas would be cleared of vegetation, or have vegetation trimmed, before staging construction equipment, thus minimizing the probability of fire during construction. Although the need for emergency services may arise during construction of the GKR Project, such a need would not substantially affect the provision of existing emergency services or require the provision of service beyond existing capacities.

Construction would not impede ingress and egress of emergency vehicles during construction and operation, nor is construction anticipated to affect response times. Any lane or road closures, if necessary, would be temporary and would be coordinated with local jurisdictions, and traffic control would be implemented as necessary per APM TRA-1 (see Section 5.17 and Section 3.11).

It is not anticipated that the GKR Project would adversely affect the use or operation of any public services or facilities in the vicinity of the GKR Project alignment, including schools, fire, and police protection services, emergency services, hospitals, or other services. Construction of the GKR Project would not generate the need for new or additional public services such as school or other facilities because it would not result in construction of residential or other land uses that would directly or indirectly induce population growth in the area. Therefore, no impacts on public services are anticipated during construction of the GKR Project.

*5.15.4.1.1.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that are under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

### *5.15.4.2 Emergency Response Times*

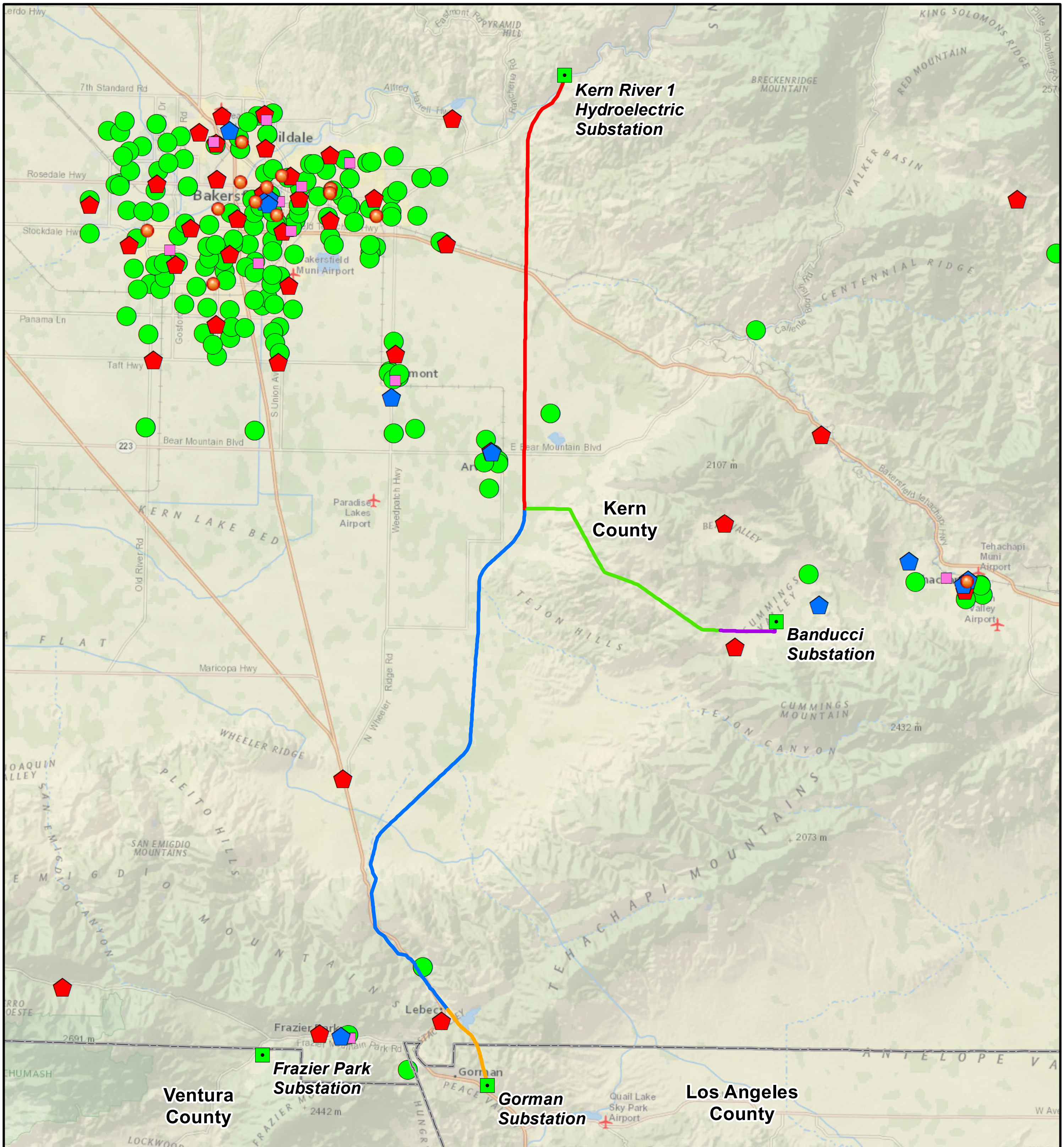
Impacts on emergency response times during project construction and operation, including impacts during any temporary road closures, and approaches to address impacts on emergency response times, are addressed above in Sections 5.15.1.1.1, 5.15.1.1.2, and 5.15.4.1.1.1.

### *5.15.4.3 Displaced Population*

As presented above in Section 5.14, the GKR Project would not displace any people or populations.

## 5.15.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for the Public Services resource area.




## Legend

- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Counties
- Substation
- Police Station
- Fire Station
- School
- Hospital
- Library

N

0 10

Miles

NOTES:

Sources: https://services5.arcgis.com/Y8jwjGUWbRjuqpG5/arcgis/rest/services/General_Acute_Hospitals/FeatureServer;
http://services.arcgis.com/BLN4oKB0N1YSgvY8/arcgis/rest/services/Fire_Stations/FeatureServer;
https://services5.arcgis.com/Y8jwjGUWbRjuqpG5/arcgis/rest/services/Fire_Stations/FeatureServer;
https://services.arcgis.com/0jRIQ17Qmni5zEMr/arcgis/rest/services/Schools/FeatureServer;
https://services1.arcgis.com/hMI3PkDNFX12WUKT/arcgis/rest/services/Library_and_Literacy_Services/FeatureServer;
http://services.arcgis.com/BLN4oKB0N1YSgvY8/arcgis/rest/services/Fire_Stations/FeatureServer

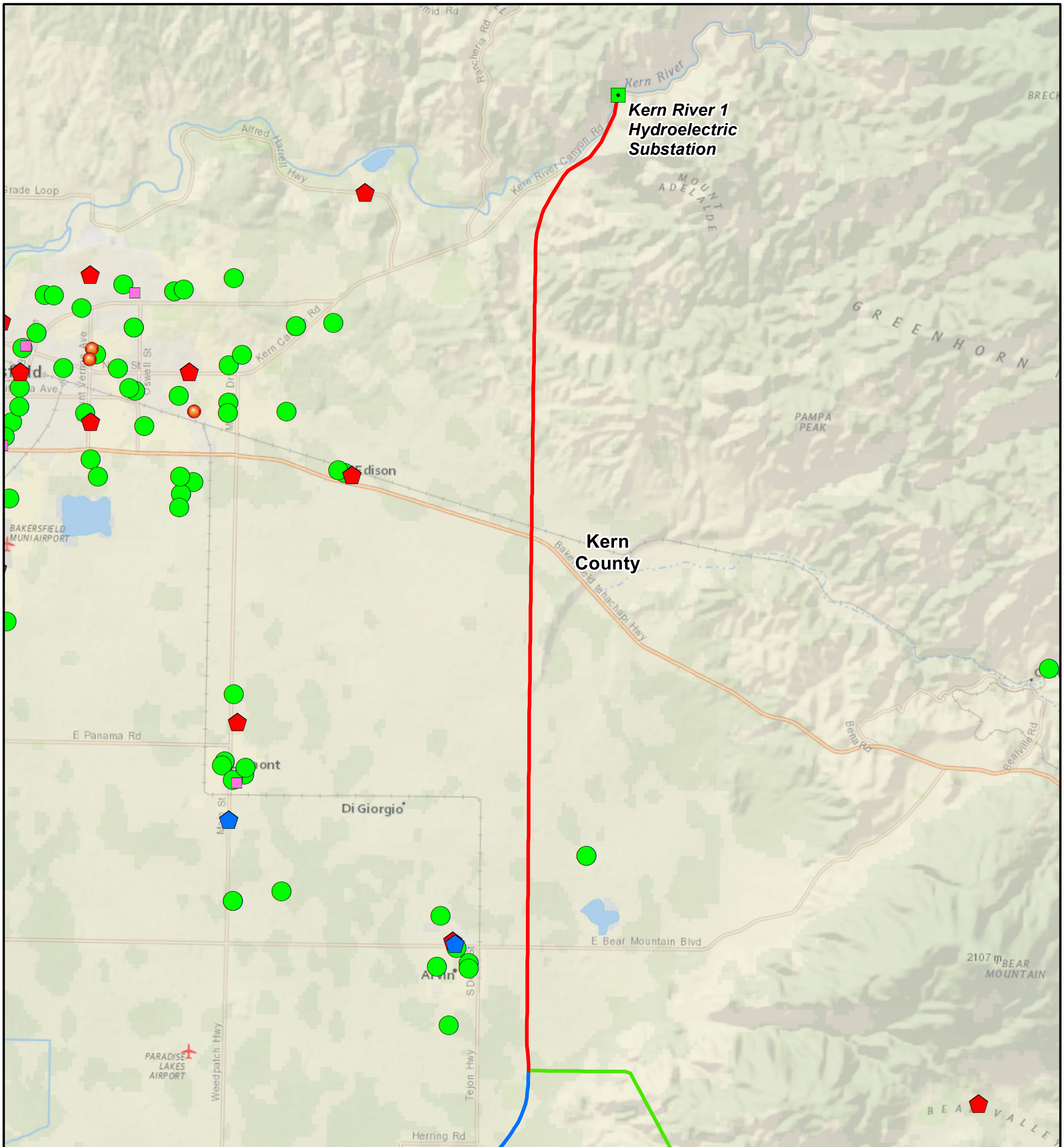
# GORMAN-KERN RIVER 66 kV PROJECT

## PUBLIC SERVICES IN THE PROPOSED PROJECT VICINITY

ARCADIS | SOUTHERN CALIFORNIA EDISON, An EDISON INTERNATIONAL® Company

FIGURESET 5.15-1.a

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-15-1_PublicServices_KERN.mxd 06/15/2021




**Legend**

- Segment 1
- Segment 2
- Segment 4
- Counties
- Substation
- Police Station
- Fire Station
- School
- Hospital
- Library

N

0 — 4 Miles

# GORMAN-KERN RIVER 66 kV PROJECT

## PUBLIC SERVICES IN THE PROPOSED PROJECT VICINITY

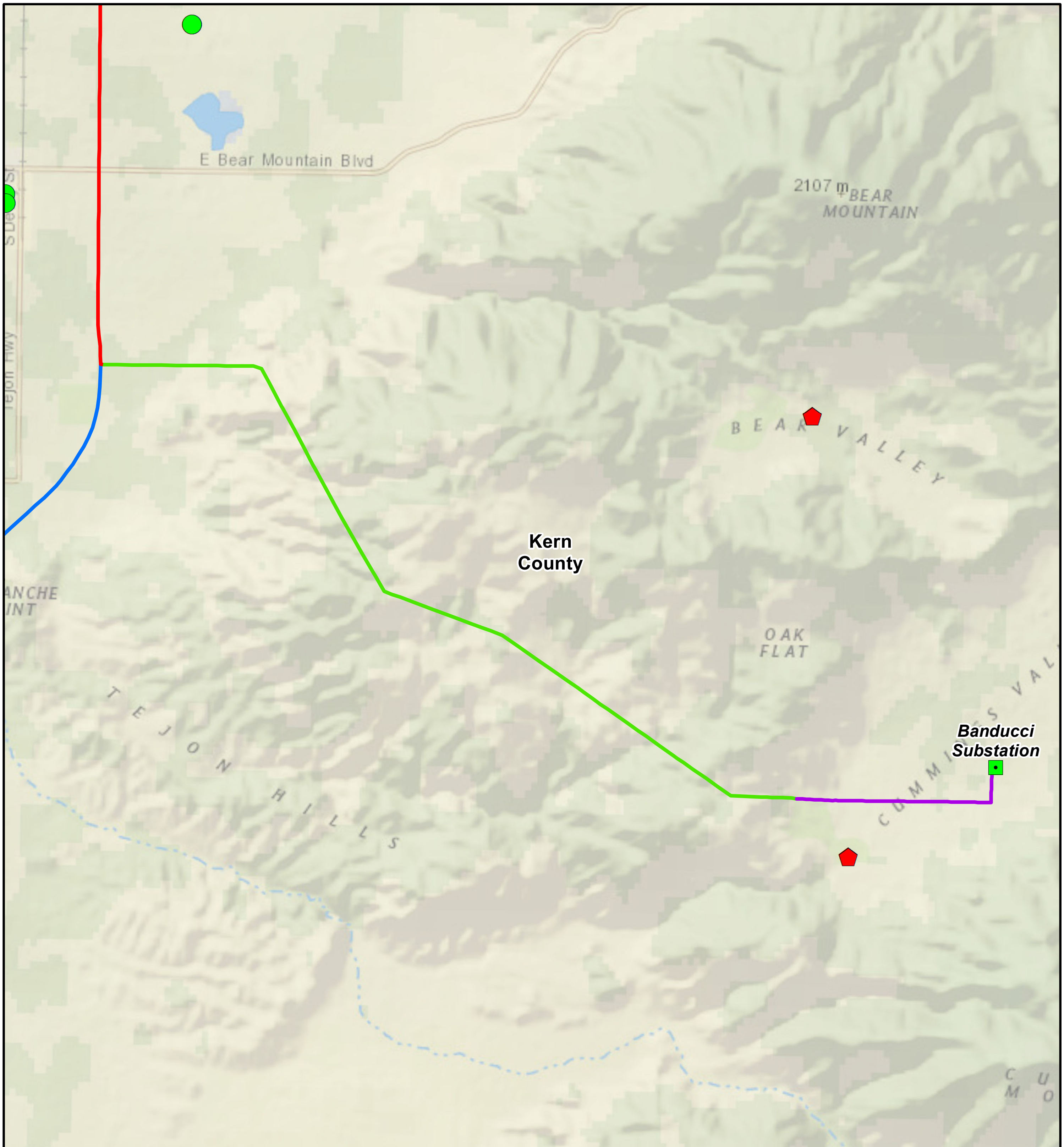
ARCADIS

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

FIGURESET
5.15-1.b

NOTES:
*Sources: https://services5.arcgis.com/Y8jwjGUWbRjuqpG5/arcgis/rest/services/General_Acute_Hospitals/FeatureServer;*
*http://services.arcgis.com/BLN4oKB0N1YSgvY8/arcgis/rest/services/Fire_Stations/FeatureServer;*
*https://services5.arcgis.com/Y8jwjGUWbRjuqpG5/arcgis/rest/services/Fire_Stations/FeatureServer;*
*https://services.arcgis.com/0jRIQ17Qmni5zEMr/arcgis/rest/services/Schools/FeatureServer;*
*https://services1.arcgis.com/hMI3PkDNFX12WUKT/arcgis/rest/services/Library_and_Literacy_Services/FeatureServer;*
*http://services.arcgis.com/BLN4oKB0N1YSgvY8/arcgis/rest/services/Fire_Stations/FeatureServer*

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-15-1_PublicServices_KERN.mxd 06/15/2021




**Legend**

| | | | |
|---|---|---|---|
| Segment 1 | | Counties | |
| Segment 2 | | Substation | |
| Segment 4 | | Fire Station | |
| Segment 5 | | School | |

N

0 2.8

Miles

**GORMAN-KERN RIVER 66 kV PROJECT**

**PUBLIC SERVICES IN THE PROPOSED PROJECT VICINITY**

ARCADIS

SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL® Company

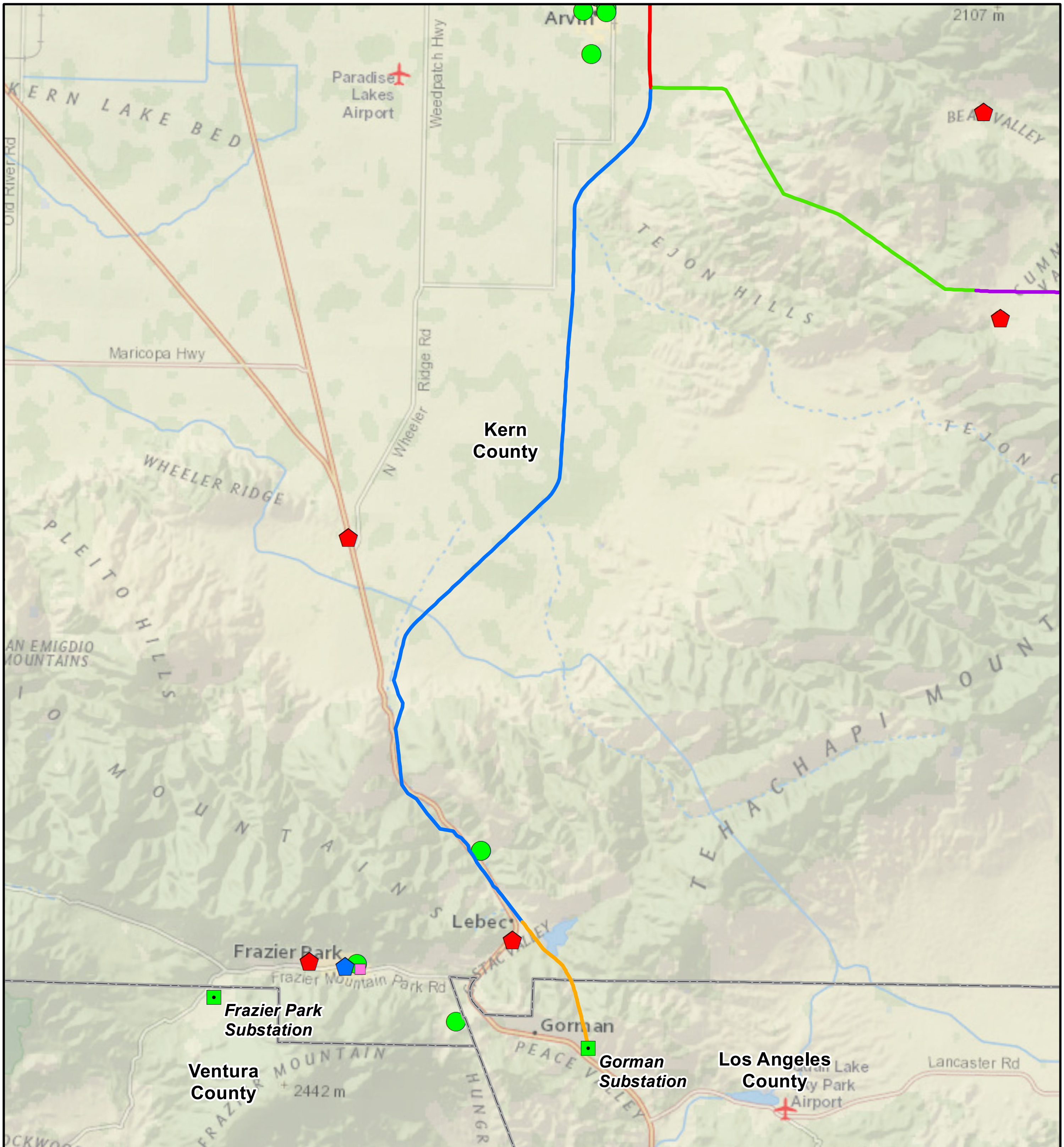
**FIGURESET**

**5.15-1.c**

*NOTES:*

*Sources: https://services5.arcgis.com/Y8jwjGUWbRjuqpG5/arcgis/rest/services/General_Acute_Hospitals/FeatureServer; http://services.arcgis.com/BLN4oKB0N1YSgvY8/arcgis/rest/services/Fire_Stations/FeatureServer; https://services5.arcgis.com/Y8jwjGUWbRjuqpG5/arcgis/rest/services/Fire_Stations/FeatureServer; https://services.arcgis.com/0jRIQ17Qmni5zEMr/arcgis/rest/services/Schools/FeatureServer; https://services1.arcgis.com/hMI3PkDNFX12WUKT/arcgis/rest/services/Library_and_Literacy_Services/FeatureServer; http://services.arcgis.com/BLN4oKB0N1YSgvY8/arcgis/rest/services/Fire_Stations/FeatureServer*

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-15-1_PublicServices_KERN.mxd 06/15/2021




**Legend**

| | | | |
|---|---|---|---|
| | Segment 1 | | Counties |
| | Segment 2 | | Substation |
| | Segment 3 | | Fire Station |
| | Segment 4 | | School |
| | Segment 5 | | Library |

*NOTES:*
*Sources: https://services5.arcgis.com/Y8jwjGUWbRjuqpG5/arcgis/rest/services/General_Acute_Hospitals/FeatureServer;*
*http://services.arcgis.com/BLN4oKB0N1YSgvY8/arcgis/rest/services/Fire_Stations/FeatureServer;*
*https://services5.arcgis.com/Y8jwjGUWbRjuqpG5/arcgis/rest/services/Fire_Stations/FeatureServer;*
*https://services.arcgis.com/0jRIQ17Qmni5zEMr/arcgis/rest/services/Schools/FeatureServer;*
*https://services1.arcgis.com/hMI3PkDNFX12WUKT/arcgis/rest/services/Library_and_Literacy_Services/FeatureServer;*
*http://services.arcgis.com/BLN4oKB0N1YSgvY8/arcgis/rest/services/Fire_Stations/FeatureServer*

**GORMAN-KERN RIVER 66 kV PROJECT**

**PUBLIC SERVICES IN THE PROPOSED PROJECT VICINITY**

ARCADIS SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL® Company

**FIGURESET**
**5.15-1.d**

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-15-1_PublicServices_KERN.mxd 06/15/2021

# 5.16 Recreation

This Section of the PEA describes recreation in the vicinity of the GKR Project, as well as the potential impacts that could result from construction and operation of the GKR Project.

## 5.16.1 Environmental Setting

### *5.16.1.1 Recreational Setting*

The GKR Project is located in Kern County and Los Angeles County, and in the cities of Arvin and Bakersfield.

Parks and recreation areas were identified by reviewing City of Arvin, City of Bakersfield, Kern County, and Los Angeles County General Plans, the County of Kern Parks and Recreation Master Plan, and California Department of Parks and Recreation and federal land management documents.

Approximately 0.4 miles of Segment 1 is located on the SNF. Approximately 0.75 miles of the GKR Project alignment in Segment 2 is located adjacent to the California Department of Parks and Recreation's Fort Tejon State Historic Park and approximately 0.1 miles is located on the LPNF.

#### 5.16.1.1.1 Sequoia National Forest

There are no developed recreational facilities, such as a trailhead, campsite, or recreational building in the southwestern portion of SNF traversed by the GKR Project alignment. The nearest developed recreational facility—the Live Oak Picnic Site—is approximately 3 miles to the northeast. According to the Draft Revised Land Management Plan for SNF, the area in which the GKR Project alignment is located is denoted as part of the Lower Kern River Place; the area's Recreation Opportunity Spectrum (ROS) designation is "Roaded Natural" (Figureset 5.16-1).

The Lower Kern River Place is considered a river recreation area, with a mixture of dispersed and developed recreation opportunities. Close proximity to a large urban area (the City of Bakersfield) and easy access to the river along State Route 178 makes this area popular, especially during summer weekends and holidays. Day use activities such as fishing and picnicking are popular. Whitewater opportunities attract visitors from around the world. There are limited overnight opportunities. Visitor data for this portion of the Forest is not available.

#### 5.16.1.1.2 Los Padres National Forest

There are no specific recreational features in the small northeastern portion of the Los Padres National Forest that is traversed by the GKR Project alignment. Visitor data for this portion of the Forest is not available.

#### 5.16.1.1.3 Fort Tejon State Historic Park

Fort Tejon State Historic Park is an approximately 205-acre park managed by the California Department of Parks and Recreation; approximately 14 acres of the park are developed for recreation and historical education opportunities. The park features the remains of a U.S. Army fort. The facilities include a visitor center, historic officers' quarters, picnic tables, group camp area, and restrooms. The park's Management Plan states that visitor activities at Fort Tejon can be divided between two usages: historical appreciation and education or a roadside stop off the busy highway where visitors may refresh, use the restroom, or have a picnic. Overnight parking or camping is not allowed at the highway parking lot. The GKR Project alignment is not located adjacent to and does not cross any recreational facilities in the park. Approximately 64,000 individuals visit the Park each year (California State Parks, undated).

#### 5.16.1.1.4 Kern County

The GKR Project alignment traverses central Kern County in a north-south direction. The Kern County Parks and Recreation Master Plan divides Kern County into five areas: the GKR Project falls within Area 2, Area 3, and Subarea 5b. There are no parks or recreational facilities in the vicinity of the GKR Project alignment in Area 2, Area 3 or Subarea 5b. Visitor data for Kern County parks and recreation areas is not available. Brite Lake and the Brite Valley Aquatic Recreation Area is located east of the Banducci Substation.

#### 5.16.1.1.5 Los Angeles County

The southern portion of the GKR Project alignment is located in the unincorporated Northwest Antelope Valley area of Los Angeles County. There are no recreational facilities or areas in the vicinity of the GKR Project alignment in Los Angeles County.

#### 5.16.1.1.6 City of Arvin

The GKR Project alignment is located immediately west of Tower Line Road in the City of Arvin; Tower Line Road marks the eastern boundary of the City of Arvin. There are no parks or other recreational facilities within 0.5 miles of the GKR Project alignment in the City of Arvin.

#### 5.16.1.1.7 City of Bakersfield

There are no parks or other recreational facilities within 0.5 miles of the GKR Project alignment in the City of Bakersfield.

## 5.16.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the GKR Project.

### *5.16.2.1 Regulatory Setting*

#### 5.16.2.1.1 Federal

##### *5.16.2.1.1.1 Los Padres National Forest, Land Management Plan Strategy*

The Los Padres Land Management Plan Strategy describes the strategic direction at the broad program-level for managing the land and its resources. The management strategies are consistent with the concept of adaptive management and sustainable resource use. The Plan's program tiers from National Strategic Plan Goals including:

> Goal 3.1 – Provide for Public Use and Natural Resource Protection
>
> REC 1 – Recreation Opportunity – Manage National Forest Land to achieve recreation opportunity spectrum (ROS) classes.

The ROS for lands traversed by the GKR Project alignment are classified as Semi-Primitive Non-Motorized and Roaded Natural.

##### *5.16.2.1.1.2 Sequoia National Forest, Draft Revised Land Management Plan, Recreation Places*

As with the LPNF Land Management Plan Strategy, the SNF Draft Revised Land Management Plan is the principal document that guides the decision making of the USFS manager for the SNF. The Plans guide where and under what conditions an activity or project on SNF lands can proceed. Each time a project or activity is proposed, the SNF must ensure that it is consistent with the Plan. The Plan is strategic in nature and does not make decisions about site-specific projects; the Plan identifies geographic areas and identifies suitable uses.

The Recreation Places and Desired Conditions provide a framework to guide management efforts to sustain scenery and recreation settings, recreation opportunities, and recreation sites and infrastructure. The desired condition for the area through which the GKR Project alignment passes is as follows:

> Desired Conditions (MA-LWKN-DC)

> 1 – Lower Kern River Place is sustained as a natural appearing landscape providing a balance of developed and dispersed river oriented recreation opportunities and settings. The river, which is wild and scenic river status eligible, provides opportunities for the public to enjoy nature-based activities along the Kern River. Outfitter and guide services provide world class whitewater boating opportunities. Areas of high use maintain a quality experience for visitors and promote a stewardship ethic. Utilities are considered if their location will not limit the achievement of the roles, contributions and sense of the place. Management is aligned with the recreation opportunity spectrum and the roles, contributions and sense of the place. Scenic character is sustained by resilient landscapes that support and enhance the scenery setting.

#### 5.16.2.1.2 State

##### *5.16.2.1.2.1 Fort Tejon State Historic Park General Plan*

The General Plan addresses the Park's cultural, natural, aesthetic, and recreational resources, interpretation of those resources, land use, facility development, general operation, and coordination with other public and private entities. The following is the stated Recreation Resource Management Policy: "Provide for recreational opportunities that are complementary to resource values." The General Plan also notes that active recreational activities must be subordinate to protection of the Park's resources.

#### 5.16.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the GKR Project. Pursuant to GO 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the GKR Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

##### *5.16.2.1.3.1 County of Kern Parks and Recreation Master Plan*

The County of Kern Parks and Recreation Master Plan contains a number of goals, policies, and implementation measures related to parks and recreational facilities; none are relevant to the GKR Project.

##### *5.16.2.1.3.2 Los Angeles County General Plan, Conservation and Natural Resources Element*

The Conservation and Natural Resources Element guides the long-term conservation of natural resources and preservation of available open space areas. The Element contains a number of goals and policies, including:

> Goal C/NR 1: Open space areas that meet the diverse needs of Los Angeles County
>
> Topic: Open Space Preservation and Conservation of Natural Areas
>
> Policy C/NR 1.1: Implement programs and policies that enforce the responsible stewardship and preservation of dedicated open space areas.
>
> Policy C/NR 1.2: Protect and conserve natural resources, natural areas, and available open spaces.

##### *5.16.2.1.3.3 Los Angeles County General Plan, Parks and Recreation Element*

The Parks and Recreation Element provides policy direction for the maintenance and expansion of the County's parks and recreation system. The purpose of the Parks and Recreation Element is to plan and provide for an integrated parks and recreation system that meets the needs of residents. There are no County parks or recreation areas in the vicinity of the GKR Project alignment in Los Angeles County.

*5.16.2.1.3.4 City of Arvin General Plan*

The City of Arvin's General Plan contains a number of goals and policies related to recreation and recreational facilities; none are relevant to the GKR Project.

*5.16.2.1.3.5 City of Bakersfield General Plan, Parks Element*

The City of Bakersfield General Plan's Parks Element contains a number of goals, policies, and implementation measures related to recreation and recreational facilities; none are relevant to the GKR Project.

## 5.16.3 Impact Questions

### *5.16.3.1 Impact Questions*

The significance criteria for assessing the impacts to recreational resources are derived from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated
- Include recreational facilities, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment

### *5.16.3.2 Additional CEQA Impact Questions*

The CPUC has identified additional CEQA significance criteria. According to these additional CEQA significance criteria, a project causes a potentially significant impact if it would:

- Reduce or prevent access to a designated recreation facility or area
- Substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas
- Damage recreational trails or facilities?

## 5.16.4 Impact Analysis

### *5.16.4.1 Impact Analysis*

#### 5.16.4.1.1 Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

*5.16.4.1.1.1 Construction*

**No Impact.** The use of parks and recreational facilities is closely tied to population; as population increases, the use of existing parks and recreational facilities can be expected to increase proportionally. Similarly, the loss of existing parks and recreational facilities would result in a concentration of use at remaining parks and facilities.

As presented in the Population and Housing section (Section 5.14), the GKR Project would not directly or indirectly induce any population growth. During construction, local parks may be used by workers during their lunch or break periods; the short duration of construction activities and the small number of construction workers would not result in a significant increase in the use of existing parks or recreational facilities.

The limited increase in the use of parks and recreational facilities by workers during construction and the lack of population growth resulting from the GKR Project would not result in either a significant increase in the use of existing parks or recreational facilities or the occurrence or acceleration of substantial physical deterioration to existing parks and recreational facilities. Therefore, no impacts would occur under this criterion.

*5.16.4.1.1.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.16.4.1.2 Would the project include recreational facilities, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

*5.16.4.1.2.1 Construction*

**No Impact.** The GKR Project does not include any recreational facilities. The GKR Project is not expected to result in a population increase and would not require the construction or expansion of any recreational facilities. As a result, there would be no adverse physical effect on the environment from the construction of new, or expansion of existing, recreational facilities. Therefore, no impacts would occur under this criterion.

*5.16.4.1.2.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.16.4.1.3 Would the project reduce or prevent access to a designated recreation facility or area?

*5.16.4.1.3.1 Construction*

**Less than Significant Impact.** Construction of the GKR Project would reduce and/or prevent access to only the Fort Tejon State Historic Park; access to all other recreation facilities and areas identified above would be unimpeded during construction. The limitation of access to Fort Tejon State Historic Park is a function of the location of the subtransmission line alignment, which passes over the entrance to the park. During conductor removal and conductor installation activities, access to the park’s parking lot would be restricted, as would pedestrian traffic through this area. It is estimated that each restriction would last one day, for a cumulative restriction of two non-consecutive days. These activities would be coordinated with Park staff and others. Given the proximity of the park to Interstate 5, and that conductor removal and installation activities across highways is generally timed to occur during nighttime, the limitation of access to the park may occur during a time the park is closed. Because of the short-term nature of the limitation of access to Fort Tejon State Historic Park, impacts would be less than significant.

*5.16.4.1.3.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.16.4.1.4 Would the project substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas?

*5.16.4.1.4.1 Construction*

**Less than Significant Impact.** The GKR Project alignment is located in or adjacent to three areas that are or may be used for recreation: the Sequoia National Forest and Los Padres National Forest, and the Fort Tejon State Historic Park.

The GKR Project would not substantially change the character of any recreational area. In the SNF, the GKR Project would replace conductor on existing structures and would install OPGW on those existing structures. This minor change would not change the character of this area.

In the Los Padres National Forest, the GKR Project would replace a single lattice steel tower with a new monopole and would replace existing conductor with new conductor. This minor change would not change the character of this area.

Adjacent to the Fort Tejon State Historic Park, the GKR Project would replace three lattice steel towers with new monopoles and would replace existing conductor with new conductor. These replacements would be outside the eastern boundary of the park adjacent to Interstate 5, and would not reduce the historical characteristics of the park that contribute to the value of the park.

Given the minor change associated with the GKR Project as addressed above, less than significant impacts would occur.

*5.16.4.1.4.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.16.4.1.5 Would the project damage recreational trails or facilities?

*5.16.4.1.5.1 Construction*

**No Impact.** GKR Project components do not intersect any identified recreational trails, and no components of the GKR Project are located on a recreational facility. Therefore, no impacts would occur under this criterion.

*5.16.4.1.5.2 Operations*

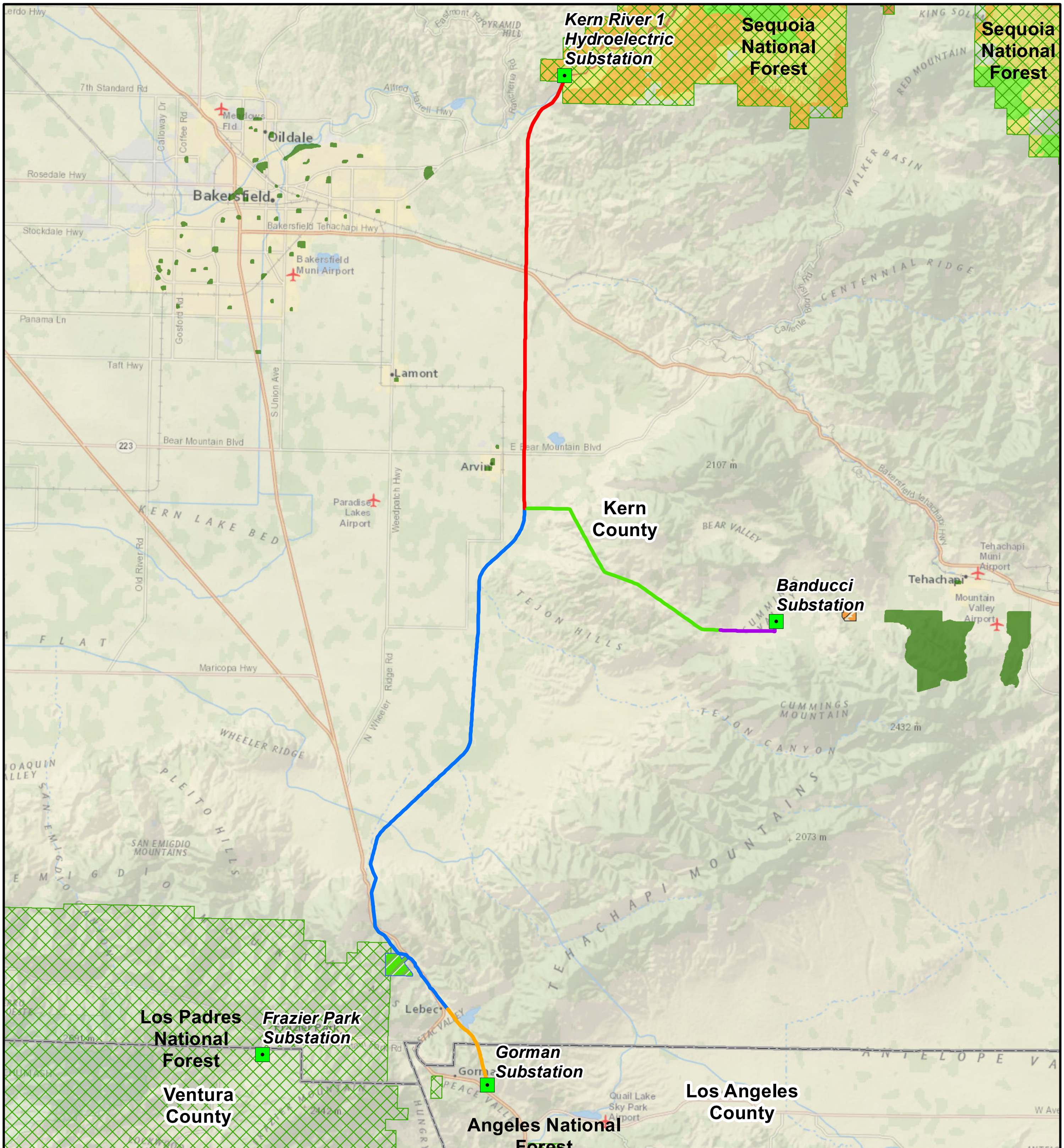
**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

### *5.16.4.2 Impact Details*

The maximum extent of each impact, and when and where the impacts would or would not occur, are identified in Section 5.16.4.1.3.1 above.

## 5.16.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for the Recreation resource area.




## Legend

- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Substation
- Counties
- Recreation Area
- Local Parks
- State Parks
- National Forest
- Semi Primitive Non-Motorized
- Semi Primitive Motorized
- Roaded Natural
- Rural

N

0 — 10 Miles

NOTES:
(1) Sources: *http://services.gis.ca.gov/arcgis/services*; *https://services2.arcgis.com/AhxrK3F6WM8ECvDi/arcgis/rest/services/Park_Boundaries_2017/FeatureServer*; *https://services1.arcgis.com/fBc8EJBxQRMcHlei/arcgis/rest/services/NPS_Park_Boundaries/FeatureServer*
(2) Kern County parks are not shown on the map because there were none located near the project alignment.

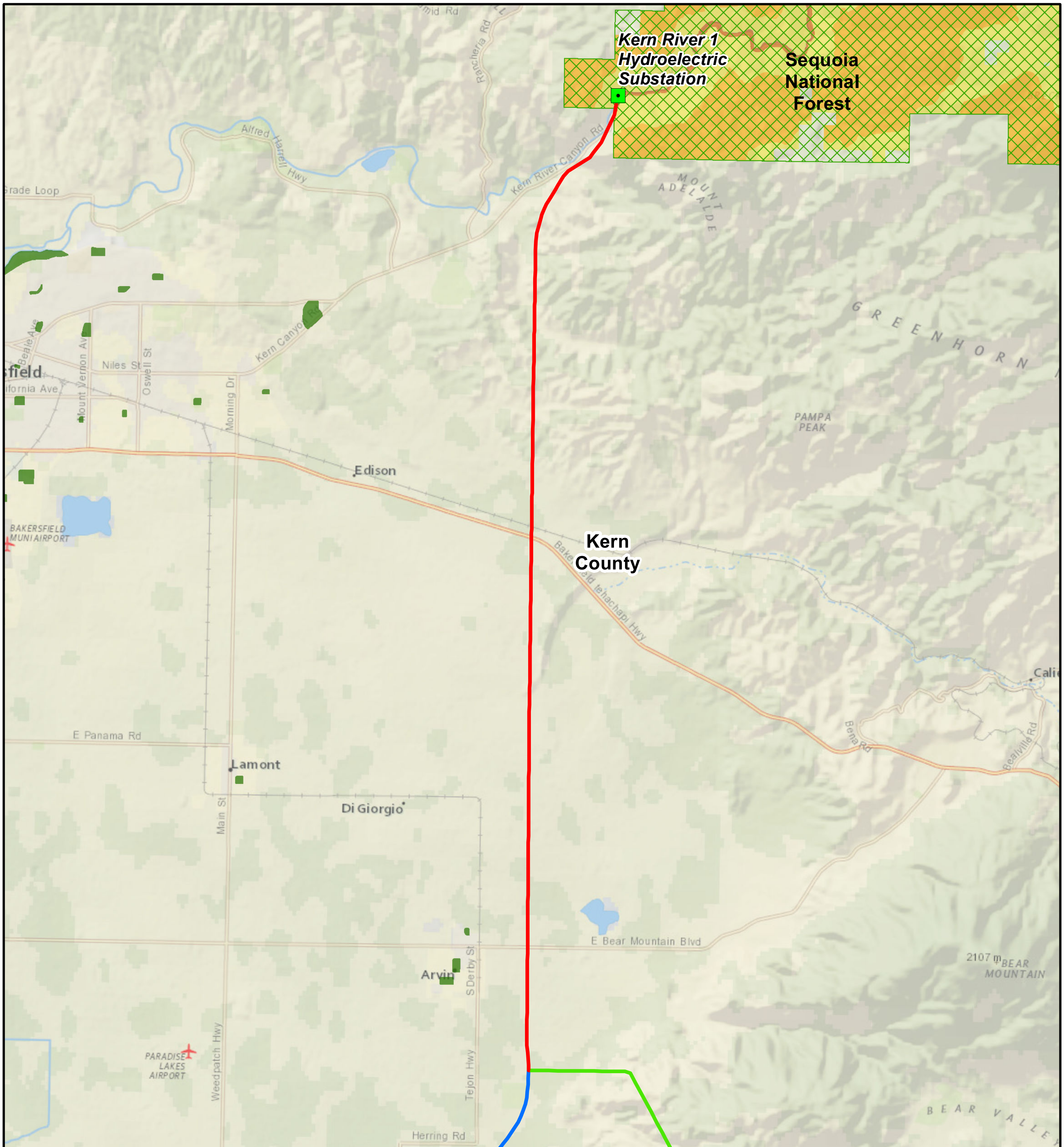
# GORMAN-KERN RIVER 66 kV PROJECT

# PARKS AND RECREATIONAL FACILITIES

ARCADIS | SOUTHERN CALIFORNIA EDISON — An EDISON INTERNATIONAL Company

FIGURESET
5.16-1.a

T:_ENV\SCE\SCE_TLLRVArcGIS_Desktop\PEA_Figures\Kern\Figure5-16-1_ParksRecFacilities_KERN.mxd 6/18/2021




## Legend

- Segment 1
- Segment 2
- Segment 4
- Substation
- Counties
- Local Parks
- National Forest
- Semi Primitive Motorized
- Roaded Natural
- Rural

N

0 — 4 Miles

NOTES:
(1) Sources: *http://services.gis.ca.gov/arcgis/services*; *https://services2.arcgis.com/AhxrK3F6WM8ECvDi/arcgis/rest/services/Park_Boundaries_2017/FeatureServer*; *https://services1.arcgis.com/fBc8EJBxQRMcHlei/arcgis/rest/services/NPS_Park_Boundaries/FeatureServer*
(2) Kern County parks are not shown on the map because there were none located near the project alignment.

# GORMAN-KERN RIVER 66 kV PROJECT

# PARKS AND RECREATIONAL FACILITIES

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURESET
5.16-1.b

T:_ENV\SCE\SCE_TLLRV\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-16-1_ParksRecFacilities_KERN.mxd 6/18/2021


**Legend**

| | |
|---|---|
| Segment 1 | Substation |
| Segment 2 | Counties |
| Segment 4 | Recreation Area |
| Segment 5 | Local Parks |

N

0 — 3.6 Miles

NOTES:
(1) Sources: *http://services.gis.ca.gov/arcgis/services*; *https://services2.arcgis.com/AhxrK3F6WM8ECvDi/arcgis/rest/services/Park_Boundaries_2017/FeatureServer*; *https://services1.arcgis.com/fBc8EJBxQRMcHlei/arcgis/rest/services/NPS_Park_Boundaries/FeatureServer*
(2) Kern County parks are not shown on the map because there were none located near the project alignment.

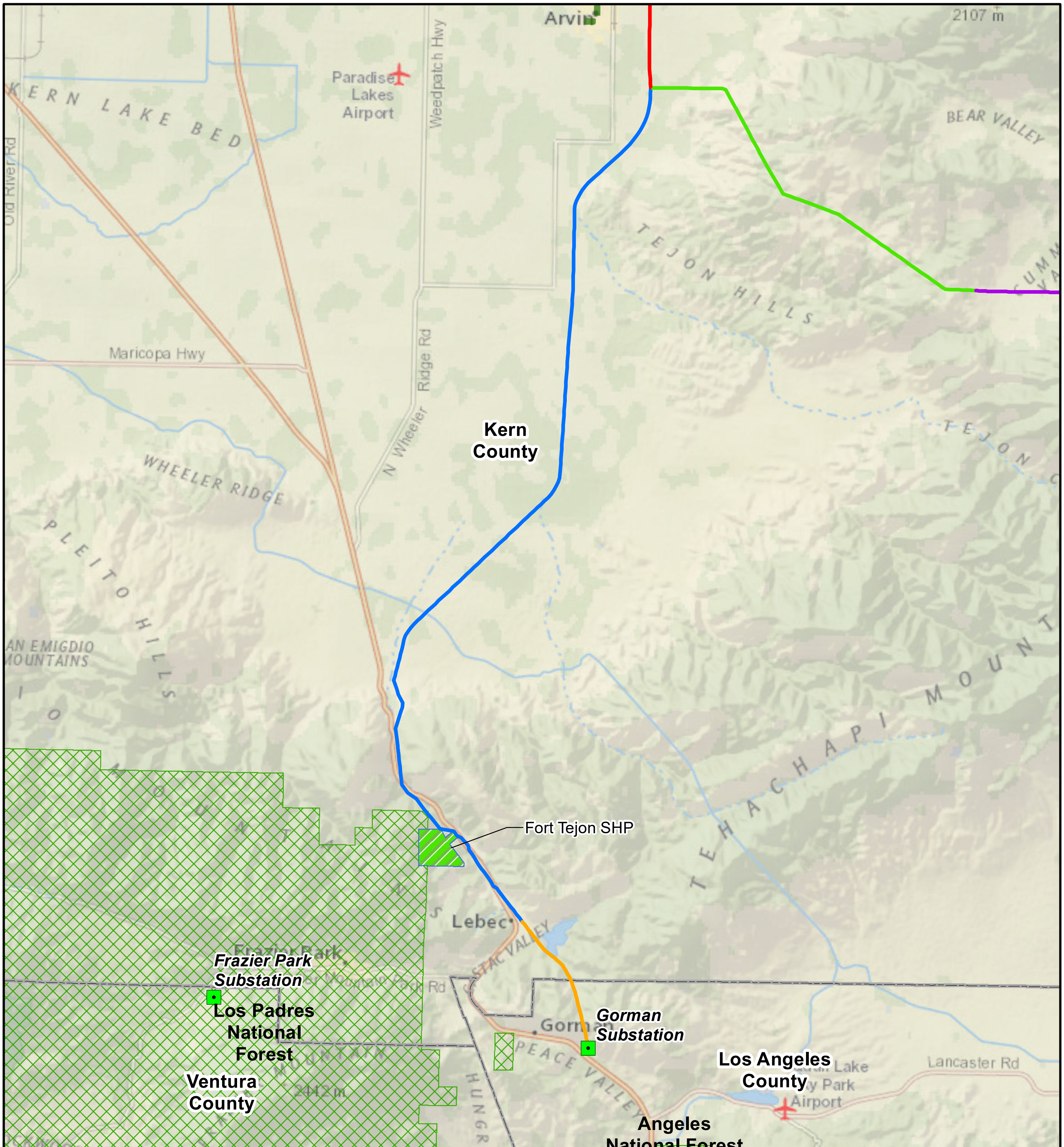
**GORMAN-KERN RIVER 66 kV PROJECT**

**PARKS AND RECREATIONAL FACILITIES**

ARCADIS | SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company

FIGURESET **5.16-1.c**

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-16-1_ParksRecFacilities_KERN.mxd 6/18/2021




## Legend

- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Substation
- Counties
- Local Parks
- State Parks
- National Forest

N

0 — 6 Miles

NOTES:
(1) Sources: *http://services.gis.ca.gov/arcgis/services*; *https://services2.arcgis.com/AhxrK3F6WM8ECvDi/arcgis/rest/services/Park_Boundaries_2017/FeatureServer*; *https://services1.arcgis.com/fBc8EJBxQRMcHlei/arcgis/rest/services/NPS_Park_Boundaries/FeatureServer*
(2) Kern County parks are not shown on the map because there were none located near the project alignment.

# GORMAN-KERN RIVER 66 kV PROJECT

## PARKS AND RECREATIONAL FACILITIES

ARCADIS | SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company

FIGURESET 5.16-1.d

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-16-1_ParksRecFacilities_KERN.mxd 6/18/2021

## 5.17 Transportation

This Section of the PEA describes transportation in the vicinity of the GKR Project, as well as the potential impacts that could result from construction and operation of the GKR Project.

### 5.17.1 Environmental Setting

The environmental setting section describes the existing conditions for transportation in the GKR Project area. The GKR Project is located within unincorporated Kern County and Los Angeles County, and in the cities of Arvin and Bakersfield.

The predominant land uses in all Segments are open space and agriculture. Scattered rural residential areas are found along all Segments, with suburbanized developments found along Segments 4 and 5. Agricultural land uses predominate in Segments 1, 2, and 5. Commercial land uses proximate to the GKR Project alignment are largely confined to the City of Arvin in Segment 1 and in the Grapevine area in Segment 2. Industrial uses, including hydrocarbon production and transportation infrastructure, are found along Segment 2. Figure 5.17-1 illustrates the transportation-related infrastructure discussed in the following sections.

#### *5.17.1.1 Circulation System*

The GKR Project is located generally between the Kern River in the north, the City of Tehachapi in the east, and the southern end of Tejon Pass in the south (Figure 5.17-1). The GKR Project traverses portions of unincorporated Kern County and unincorporated Los Angeles County, and is located within portions of or proximate to the cities of Arvin and Bakersfield.

The regional circulation system is comprised of interstate highways, state highways, and county and local roads. Interstate 5 (I-5), California State Route 58 (SR-58, also known as the Kern County Korean War Veterans Memorial Highway), SR-178, SR-202, and SR-223 provide regional access to and through the area.

#### *5.17.1.2 Existing Roadways and Circulation*

The existing roadways that may be used to access the GKR Project alignment site and transport materials during construction, or that are otherwise adjacent to or crossed by the GKR Project alignment, are presented in Table 5.17-1.

**Table 5.17-1. Existing Roadways**

| Roadway | Jurisdiction/ Ownership | Number of Lanes | Traffic Volume (Annual Average Daily Traffic [AADT]) | Closest Project Feature/ Distance (miles) |
|---|---|---|---|---|
| **Segment 1** | | | | |
| SR-178 | State | 2 | 3,850 – 69,000 | Segment 1 / 0 |
| Breckenridge Road | Kern County | 2 | 173 | Segment 1 / 0 |
| Edison Highway | Kern County | 2 | 228 – 2,525 | Segment 1 / 0 |
| Towerline Road | Kern County | 2 | 409 – 1,239 | Segment 1 / 0 |
| SR-58 | State | 4 | 570 – 6,400 | Segment 1 / 0 |
| Muller Road | Kern County | 2 | N/A | Segment 1 / 0 |
| Hermosa Road | Kern County | 2 | 323 | Segment 1 / 0 |
| Panama Road | Kern County | 2 | 688 | Segment 1 / 0 |
| Di Giorgio Road | Kern County | 2 | 662 | Segment 1 / 0 |
| Buena Vista Boulevard | Kern County | 2 | 712 | Segment 1 / 0 |
| Russell Avenue | Kern County | 2 | 369 | Segment 1 / 0 |
| Sunset Boulevard | Kern County | 2 | 985 | Segment 1 / 0 |

**Table 5.17-1. Existing Roadways**

| Roadway | Jurisdiction/ Ownership | Number of Lanes | Traffic Volume (Annual Average Daily Traffic [AADT]) | Closest Project Feature/ Distance (miles) |
|---|---|---|---|---|
| Landers Road | Kern County | 2 | N/A | Segment 1 / 0 |
| Richardson Road | Kern County | 2 | N/A | Segment 1 / 0 |
| Widmere Road | Kern County | 2 | N/A | Segment 1 / 0 |
| SR-223 | State | 2 | 180 – 920 | Segment 1 / 0 |
| East Sycamore Road | Kern County | 2 | 376 | Segment 1 / 0 |
| Millux Road | Kern County | 2 | 31 | Segment 1 / 0 |
| Tejon Highway | Kern County | 2 | 877 – 5,263 | Segment 1 / 1 |
| SR-184 | State | 2 | 490 – 1,800 | Segment 1 / 4.2 |
| **Segment 2** | | | | |
| Kenmar Lane | Kern County | 2 | 75 | Segment 2 / 0 |
| Kenmar Road | Kern County | 2 | N/A | Segment 2 / 0 |
| Frick Road | Kern County | 2 | N/A | Segment 2 / 0 |
| Comanche Point Road | Kern County | 2 | 132 | Segment 2 / 0 |
| Tejon Park Drive | Kern County | 2 | N/A | Segment 2 / 0 |
| Sweet Cherry Lane | Kern County | 2 | N/A | Segment 2 / 0 |
| Grasshopper Lane | Kern County | 2 | N/A | Segment 2 / 0 |
| David Road | Kern County | 2 | 2,894 | Segment 2 / 0 |
| Sebastian Road | Kern County | 2 | 631 | Segment 2 / 0 |
| Rancho Road | Kern County | 2 | 1,340 – 1,985 | Segment 2 / 0 |
| Laval Road | Kern County | 2 | 5,316 | Segment 2 / 0 |
| Edmonston Plant Pumping Road | Kern County | 2 | N/A | Segment 2 / 0 |
| Interstate 5 | State | 8 | 2,050 – 9,200 | Segment 2 / 0 |
| Digier Road | Kern County | 2 | 76 | Segment 2 / 0 |
| Lebec Road | Kern County | 2 | 494 | Segment 2 / 0 |
| Lebec Oaks Road | Kern County | 2 | N/A | Segment 2 / 0 |
| N./S. Wheeler Ridge Road | Kern County | 2 / 3 | 2,505 – 8,520 | Segment 2 / 2.6 |
| SR-99 | State | 6 | 4,900 – 5,200 | Segment 2 / 3 |
| **Segment 3** | | | | |
| Bear Trap Road | Kern County | 2 | N/A | Segment 3 / 0 |
| Gorman Post Road | Los Angeles County | 2 | 250 | Segment 3 / 0 |
| **Segment 4** | | | | |
| Comanche Point Road | Kern County | 2 | N/A | Segment 4 / 0 |
| Badger Court | Kern County | 2 | N/A | Segment 4 / 0 |
| Quail Drive | Kern County | 2 | N/A | Segment 4 / 0 |
| Jacks Hill Drive | Kern County | 2 | N/A | Segment 4 / 0 |
| Antler Way | Kern County | 2 | N/A | Segment 4 / 0 |
| Elkhorn Place | Kern County | 2 | N/A | Segment 4 / 0 |
| Angus Court | Kern County | 2 | N/A | Segment 4 / 0 |
| Longhorn Lane | Kern County | 2 | N/A | Segment 4 / 0 |
| **Segment 5** | | | | |
| Birkdale Court | Kern County | 2 | N/A | Segment 5 / 0 |
| St. Andrews Drive | Kern County | 2 | N/A | Segment 5 / 0 |
| Banducci Road | Kern County | 2 | 970 – 4,210 | Segment 5 / 0 |
| Stallion Springs Drive | Kern County | 2 | N/A | Segment 5 / 0 |
| Edward Street | Kern County | 2 | N/A | Segment 5 / 0 |
| Pellisier Road | Kern County | 2 | 2,840 | Segment 5 / 0 |

### *5.17.1.3 Transit and Rail Services*

Kern County operates Kern Transit, which provides bus service throughout Kern County. In addition, the County has agreements with several cities to share the cost of providing transit service to county areas surrounding incorporated cities (Kern COG 2014). Kern Transit Route 100 (Bakersfield-Lancaster) uses SR-58, which is crossed by the GKR Project in Segment 1. Kern Transit Route 130 (Santa Clarita-Bakersfield) parallels a portion of the GKR Project in the vicinity of the communities of Lebec and Grapevine. Two stops along Route 130 are within 0.5 miles of the GKR Project alignment: the Valero Gas-Edmonston Pumping Plant Road stop is served by request, and the Post Office/Lebec Road stop is served twice daily. Kern Transit Route 150 (Lake Isabella to Bakersfield) uses SR-178, which is crossed by the GKR Project in the vicinity of the existing Kern River 1 Hydroelectric Substation (Kern Regional Transit 2017) (Table 5.17-2, Figure 5.17-1). Operating hours for these routes are presented in Table 5.17-2.

There are two railroads in the vicinity of the GKR Project (Kern County 2009). The San Joaquin Valley Railroad runs from Arvin to Bakersfield; at its closest, it is approximately 0.5 miles from the GKR Project alignment. The GKR Project alignment crosses a Union Pacific Railroad (UPRR) track where the alignment crosses SR-58 (Figure 5.17-1). The California High-Speed Rail System's Bakersfield-Palmdale segment will parallel the UPRR track where it crosses the GKR Project alignment.

**Table 5.17-2. Bus Routes and Frequencies**

| Route | Roadway(s) Traversed | Frequency | Hours of Operation |
|---|---|---|---|
| 100 | SR-58 | Daily | 0325 – 2313 (weekdays)<br>0355 – 2001 (weekends) |
| 130 | I-5, SR-99, SR-223 | Daily (except Sunday) | 0435 – 2140 (weekdays)<br>0700 – 2018 (weekends) |
| 150 | SR-178 | Daily | 0600 – 1918 (weekdays)<br>0645 – 1915 (weekends) |

### *5.17.1.4 Bicycle Facilities*

The GKR Project falls primarily within Caltrans District 6, with small portions in District 7 and District 9. Bicyclists are allowed on all Caltrans highways within the vicinity of the GKR Project (Caltrans 2015).

Bikeways were identified from the Kern County Bicycle Master Plan and Complete Streets Recommendations (Kern COG 2012). Within the City of Bakersfield, an existing Class II bikeway follows portions of Kern Canyon Road (SR-178); this Class II bikeway is identified to extend to the point where the GKR Project alignment crosses SR-178. Breckenridge Road is identified as a Class III Bikeway where the GKR Project alignment crosses this road. There are no bikeways within Los Angeles County or the cities of Arvin or Bakersfield adjacent to, or in the immediate vicinity of, the GKR Project.

### *5.17.1.5 Pedestrian Facilities*

There are no important pedestrian facilities, including walkways, near the GKR Project alignment that contribute to the circulation system; this is due to the remote and agrarian location of much of the alignment.

### *5.17.1.6 Vehicle Miles Traveled (VMT)*

VMT data for Kern County and Los Angeles County are presented in Table 5.17-3.

**Table 5.17-3. Vehicle Miles Traveled**

| Jurisdiction | Vehicle Miles Travelled | Per Capita VMT |
|---|---|---|
| Kern County (2020) | 25,112,000 | 25.39 |
| Los Angeles County (2017) | 222,610,550 | 21.9 |

Source: Kern COG 2018; Los Angeles County 2020

## 5.17.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the GKR Project.

### *5.17.2.1 Regulatory Setting*

#### 5.17.2.1.1 Federal

CFR Title 49, Subtitle B includes procedures and regulations pertaining to interstate and intrastate transport (including hazardous materials program procedures), and provides safety measure for motor carriers and motor vehicles that operate on public highways.

All airports and navigable airspace not administered by the Department of Defense are under the jurisdiction of the FAA. CFR Title 14, Section 77 establishes the standards and required notification for objects affecting navigable airspace. In general, construction projects exceeding 200 feet in height above ground or extending at a ratio greater than 50 to 1 (horizontal to vertical) from a public or military airport runway less than 3,200 feet long out to a horizontal distance of 20,000 feet are considered potential obstructions, and require notification to the FAA. For helicopters, 1 vertical foot for every 25 horizontal feet for a horizontal distance of 5,000 feet. In addition, the FAA requires a Helicopter Lift Plan for operating a helicopter within 1,500 feet of residences.

### *5.17.2.2 State*

#### 5.17.2.2.1 California Department of Transportation

Caltrans manages state highways in California. The use of California state highways for reasons other than normal transportation purposes may require written authorization or an encroachment permit from Caltrans. Caltrans has jurisdiction over the state's highway system and is responsible for protecting the public and infrastructure. Caltrans reviews all requests from utility companies that plan to conduct activities within its rights-of-way. Encroachment permits may include conditions or restrictions that limit when construction activities can occur within or above roadways under the jurisdiction of Caltrans.

Caltrans prepared a document, Guide for the Preparation of Traffic Studies (2002) that describes when a traffic impact study is needed. The intent of this guide is to provide a starting point and a consistent basis which Caltrans evaluates traffic impacts to State highway facilities. The applicability of the guide for local streets and roads (non-State highways) is at the discretion of the effected jurisdiction.

#### 5.17.2.2.2 California Transportation Commission

The California Transportation Commission (CTC) was established in 1978 out of a growing concern for a single, unified California transportation policy. The CTC is responsible for the programming and allocating of funds for the construction of highway, passenger rail, active transportation, aeronautics, and transit improvements throughout California. The CTC also advises and assists the Secretary of the California State Transportation Agency (CalSTA) and the Legislature in formulating and evaluating state policies and plans for California's transportation programs. The CTC is also an active participant in the initiation and development of State and Federal legislation that seeks to secure financial stability for the State's transportation needs.

#### 5.17.2.2.3 California Streets and Highway Code

The State of California Streets and Highway Code (SHC) requires the GKR Project proponents to obtain permits from Caltrans for any roadway encroachment during truck transportation and delivery. The SHC includes regulations for the care and protection of highways (both State and county) and requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways. (*See* SHC § 660 et seq.)

Sections 700 through 711 provide provisions that are specific to utility providers. The SHC also outlines directions for cooperation with local agencies, guidelines for permits, as well as general provisions relating to state highways and Caltrans' jurisdiction (State of California 2017).

### *5.17.2.3 Local*

The CPUC has sole and exclusive state jurisdiction over the siting and design of the GKR Project. Pursuant to GO 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority is preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the GKR Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

#### 5.17.2.3.1 Kern Council of Governments Regional Transportation Plan

The Kern Council of Governments (COG) is an association of city and county governments created to address regional transportation issues. Its member agencies include the County of Kern and 11 incorporated cities within Kern County. The Kern COG is responsible for developing and updating a variety of transportation plans, determining priority projects, allocating the federal and state funds to implement the plans, and assuring money accepted for improving plans are properly utilized.

The Kern COG's Regional Transportation Plan is a long-term (26-year) general plan for the region's transportation network, and encompasses projects for all types of travel, including aviation and freight movement. The plan assesses environmental impacts of proposed projects, and establishes air quality conformity as required by federal regulations (Kern COG 2014).

The Kern COG is required to periodically update the Regional Transportation Plan to ensure that the transportation system addresses the transportation and traffic plans for Kern County in a manner that is consistent with the applicable federal and state requirements.

#### 5.17.2.3.2 Kern County General Plan and Circulation Element

The Kern County General Plan's Circulation Element includes the following goal:

> Maintain a minimum Level Of Service (LOS) D for all roads throughout the County unless the roads are part of an adopted Community Plan or Specific Plan which utilizes Smart Growth policies that encourage efficient multi-modal movements.

#### 5.17.2.3.3 Los Angeles County Regional/Metropolitan Transportation Plan

The Regional Transportation Plan outlines general transportation goals for Los Angeles County and surrounding counties with the exception of Kern County (Southern California Association of Governments 2016). The Regional Transportation Plan describes the proposed transportation investments to meet those goals. The Regional Transportation Plan does not contain any specific goals relevant to the GKR Project.

#### 5.17.2.3.4 Los Angeles County Congestion Management Plan

The 2010 Congestion Management Program (CMP) is intended to address the impact of local growth on the regional transportation system. The CMP is consistent with statutory requirements, including monitoring LOS on the CMP Highway and Roadway network and measuring frequency and routing of public transit, among others. The multimodal CMP summarizes the results from eighteen years of highway and transit monitoring and fifteen years of monitoring local growth. The CMP provides the reader with a comprehensive review and analysis of the monitoring data gathered through the CMP. The CMP also contains specific information about the program, its requirements, and implementation. The Appendices also contain material related to the monitoring data, and provide additional technical guidance and assistance for local jurisdictions.

#### 5.17.2.3.5 City of Arvin General Plan

The City of Arvin General Plan contains a number of goals, policies, and implementation actions related to improving the operation and maintenance of citywide transportation facilities and services through the year 2030. No goals, policies, or implementation actions are relevant to the GKR Project.

#### 5.17.2.3.6 City of Bakersfield General Plan

The City of Bakersfield General Plan’s Circulation Element contains the following Policy:

Circulation-Streets Policy 36: Prevent streets and intersections from degrading below Level of Service “C” where possible due to physical constraints (as defined in a Level of Service Standard) or when the existing Level of Service is below “C” prevent where possible further degradation due to new development or expansion of existing development with a three part mitigation program: adjacent right-of-way dedication, access improvements and/or an area-wide impact fee. The area-wide impact fee would be used where the physical changes for mitigation are not possible due to existing development and/or the mitigation measure is part of a larger project, such as freeways, which will be built at a later date (I-28, I-29).

## 5.17.3 Impact Questions

### *5.17.3.1 Impact Questions*

The significance criteria for assessing the impacts to transportation and traffic are derived from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities
- Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)
- Result in inadequate emergency access

### *5.17.3.2 Additional CEQA Impact Questions*

The CPUC has identified additional CEQA significance criteria. According to these additional CEQA significance criteria, a project causes a potentially significant impact if it would:

- Would the project create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations?
- Would the project interfere with walking or bicycling accessibility?
- Would the project substantially delay public transit?

## 5.17.4 Impact Analysis

### *5.17.4.1 Impact Analysis*

#### 5.17.4.1.1 Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

**Less than Significant Impact.** Construction activities would include the movement of light, medium, and heavy-duty vehicles (including oversize vehicles such as cranes) along I-5, various state routes, and county and city-maintained roads. Construction activities would require the temporary closure of traffic lanes or roads during installation or removal of structures located adjacent to roadways, and temporary and short-term road closures would also be required during the removal and installation of overhead wire.

Project-related vehicles and equipment would generally travel from staging areas or contractor yards to work sites in the morning, returning to their points of departure in the evening. SCE anticipates that construction of the GKR Project would take approximately 24 months, and that approximately 85 workers could be working along the GKR Project alignment on any given day. It is estimated that work described in Chapter 3—Project Description would generate fewer than 250 daily vehicle trips roundtrips across the breadth of the GKR Project. The 250 daily vehicle roundtrips is inclusive of each worker making two daily personal vehicle trips (one trip in the morning to a staging area, and one trip in the reverse in the evening, for a total of 170 roundtrips per day); due to the working hours of utility and construction crews, the majority of these personal vehicle trips would occur outside the morning and evening peak hours. Construction vehicles may be parked along the alignment overnight rather than being driven back to a staging area; further, the remote and constrained work environment along much of the GKR Project alignment would require that the minimum number of vehicles needed to transport crews be driven to the work areas each morning, as parking and turn around areas are limited along much of the alignment in the National Forest. This would serve to reduce the number of vehicle movements per day.

The estimated deployment and number of crew members would vary depending on factors such as material availability, resource availability, and construction scheduling. As a result, the actual number of daily vehicle trips may be lower depending on the final construction schedule; the number of daily vehicle trips used here conservatively estimates potential impacts. Further, vehicle movements would be geographically and temporally dispersed across the GKR Project alignment.

A temporary increase in vehicle movements during Project construction activities would occur along I-5, state routes, and county and city roads; the small number of Project-related vehicle movements along these roadways, and the timing of those movements generally outside of morning and evening peak times, would not result in the lowering of the existing LOS along these roadways: as shown in Table 5.17-1, increases in AADT greater than the number of vehicle movements associated with the GKR Project would not result in lowering of the existing LOS over the planning horizons. Therefore, the GKR Project-related vehicle movements would not result in the LOS dropping below the LOS standard contained in the Kern County General Plan and Circulation Element or the City of Bakersfield General Plan, and thus the GKR Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system.

Project construction activities would require temporary lane or road closures and may require that the direction of travel on some roads be limited or modified. Temporary closure of travel lanes or roads or the modification of travel directions, could impact the performance of the circulation system in populated areas, including but not limited to intersections, streets, highways, and public transit. In these areas, SCE would obtain encroachment permits from the local jurisdictions and Caltrans, as appropriate, for lane or roadway closures. In addition, SCE would implement APM TRA-1 to ensure the safe and efficient transit of vehicles, trains, bicyclists, and pedestrians.

Based on the number of daily vehicle trips generated during construction , the GKR Project would have a less than significant impact with respect to applicable plans, ordinances or policies that establish measures of effectiveness. Further, SCE will implement APM TRA-1 during construction of the GKR Project to further ameliorate the less than significant impacts.

*5.17.4.1.1.1 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.17.4.1.2 Would the Project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

*5.17.4.1.2.1 Construction*

**No Impact.** The California Air Resources Board has set a goal of 17.11 miles average daily VMT per capita by 2035 for Kern County, and the Southern California Association of Governments has set a goal of 20.5 miles average daily VMT per capita by 2040 for Los Angeles County (Kern Council of Governments 2018 and Los Angeles County 2018).

As presented in Chapter 3 – Project Description, SCE anticipates that construction of the GKR Project would take approximately 24 months, and that up to 85 workers could be working along the GKR Project alignment on any given day. SCE anticipates that its own crews or specialty electrical contractors would be used for this work. The short duration of the construction period would not trigger the creation of any new employment positions—SCE crews and contractor crews are currently employed and utilized on projects across the broader region. Because of this, no population growth would be induced by the rebuilding of the subtransmission lines included in the GKR Project, and therefore the GKR Project would not conflict or be inconsistent with the attainment of the VMT goals. Therefore, no impact would occur under this criterion.

*5.17.4.1.2.2 Operations*

**No Impact.** As presented in Section 5.14, the GKR Project would not provide new or upgraded electrical service to the area around the GKR Project alignment. In addition, the GKR Project does not include any new infrastructure such as publicly accessible roads that could induce population growth during operations.

As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project.

Because the operation of the GKR Project infrastructure would not induce any population growth, and because no material changes in O&M activities would occur, no increase in VMT, vehicle hours traveled, or automobile trips would result, and therefore no impacts would be realized under this criterion during operations and maintenance.

#### 5.17.4.1.3 Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

*5.17.4.1.3.1 Construction*

**No Impact.** No incompatible uses of public roads are proposed. No construction, or geometric alteration, of any public roads are proposed. Therefore, no impacts would occur under this criterion.

*5.17.4.1.3.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts would be realized under this criterion during operations and maintenance.

#### 5.17.4.1.4 Would the Project result in inadequate emergency access?

*5.17.4.1.4.1 Construction*

**Less than Significant Impact.** Construction activities may require temporary closure of travel lanes on public and private roads in habited areas, and would involve the movement of oversize vehicles that could affect emergency vehicle access to and along the GKR Project alignment.

During planning for and construction of the GKR Project, road or lane closures, limitations on the direction of travel, and vehicle movements along and use of public roads and access roads would be communicated to and coordinated with the appropriate agencies and landowners, as necessary. Equipment placed on access or spur roads and in construction work areas would be situated or attended to facilitate emergency vehicle access. SCE would also obtain the appropriate permits from the local jurisdictions, land management agencies, and Caltrans, as applicable, for construction activities that would encroach upon any public ROW or easement. Therefore, impacts would be less than significant.

To further reduce impacts, SCE would implement APM TRA-1 during construction of the GKR Project.

*5.17.4.1.4.2 .Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts would be realized under this criterion during operations and maintenance.

#### 5.17.4.1.5 Would the project create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations?

*5.17.4.1.5.1 Construction*

**Less than Significant Impact.** No incompatible uses of public roads are proposed. No construction, or geometric alteration, of any public roads are proposed. Construction traffic would transit roadways along which pedestrians, cyclists, other motorists, and transit operations may be present. Construction vehicles would be operated according to applicable laws and regulations. To further reduce the potential for creating potentially hazardous conditions, SCE would implement APMs TRA-1 and TRA-3 during construction of the GKR Project. Therefore, construction of the GKR Project would not create a potentially significant hazardous condition for other users of public roads or associated infrastructure.

*5.17.4.1.5.2 Operations*

**Less than Significant Impact.** No incompatible uses of public roads are proposed. No construction, or geometric alteration, of any public roads are proposed. O&M-related vehicles would transit roadways along which pedestrians, cyclists, other motorists, and transit operations may be present; all vehicles would be operated according to applicable laws and regulations. To further reduce the potential for creating potentially hazardous conditions, SCE would implement traffic control measures during O&M activities that are similar to those detailed in APM TRA-1. Therefore, O&M of the GKR Project would not create a potentially significant hazardous condition for other users of public roads or associated infrastructure.

#### 5.17.4.1.6 Would the project interfere with walking or bicycling accessibility?

*5.17.4.1.6.1 Construction*

**Less than Significant Impact.** Walking and bicycling accessibility is very low across the GKR Project due to a dearth of dedicated pedestrian and bicycling infrastructure; along some portions of the GKR Project alignment, walking and bicycling accessibility is zero due to land ownership and the lack of public roadways. The GKR Project alignment crosses two identified bikeways and other roadways that could be used by bicyclists and pedestrians. At certain times, these roadways (or portions thereof) would be closed during construction. These closures would be intermittent and short-term, and therefore interference with walking or bicycling accessibility would be less than significant.

Construction traffic would transit roadways along which pedestrians and cyclists may be present. Construction vehicles would be operated according to applicable laws and regulations, and thus would not interfere with walking or bicycling accessibility. Through compliance with applicable laws and regulations, impacts would be less than significant under this criterion.

During construction, SCE would implement APMs TRA-1 and TRA-3, which would further lessen impacts on walking or bicycling accessibility by implementing measures detailed in the CA MUTCD and would provide alternate pedestrian routing.

*5.17.4.1.6.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and these activities are not known to have interfered with walking or bicycling accessibility in the past. Therefore, no impacts would be realized under this criterion during operations and maintenance.

#### 5.17.4.1.7 Would the project substantially delay public transit?

*5.17.4.1.7.1 Construction*

**Less Than Significant Impact.** Kern Transit bus routes would not be substantially delayed during construction. While some of the roadways over which these routes are operated would be temporarily closed during the installation or removal or overhead conductor, such closures would be short-term (less than an hour) and generally performed at times of day outside the operating hours of the routes or when route frequency is low.

#### *5.17.4.1.7.2 Operations*

**Less than Significant Impact.** Kern Transit bus routes could be delayed during routine or emergency O&M activities, including during conductor removal or installation activities, as the roadways over which these routes are operated would be temporarily closed during these activities. Such closures would be short-term (less than an hour), and while such activities are generally performed at times of day outside the operating hours of the routes, in an emergency such activities could occur at any time, including during the times when the routes are operated. However, such delays would not be substantial, and thus no impacts would be realized under this criterion during operations and maintenance.

### *5.17.4.2 VMT*

No portion of the GKR Project is located within 0.5 miles of a major transit stop or a high-quality transit corridor.

It is estimated that work described in Chapter 3—Project Description would generate fewer than 250 daily vehicle trips roundtrips across the breadth of the GKR Project. The 242 daily vehicle roundtrips is inclusive of each worker making two daily personal vehicle trips (one trip in the morning to a staging area, and one trip in the reverse in the evening, for a total of 170 roundtrips per day). The remaining 72 daily vehicle roundtrips would account for heavy-duty vehicle movements associated with construction.

The VMT generated by the GKR Project during construction is shown in Table 5.17-4.

**Table 5.17-4. VMT, GKR Project Construction**

| | VMT, Daily[1] | VMT, Total |
|---|---|---|
| Worker Vehicles | 1,598 | 957,250 |
| Construction Vehicles | 1,203 | 720,480 |

Notes:
1 Assumes 6-day construction week, and 24-month construction duration, totaling 599 work days.

No VMT will be generated by operation of the GKR Project; the VMT associated with operation of the replacement GKR Project infrastructure will be the same as the VMT associated with operation of the existing GKR Project infrastructure. VMT data are provided in Appendix L.

Comparison of the GKR Project-related VMT data presented in Table 5.17-4 with the existing VMT data for Kern and Los Angeles counties presented in Table 5.17-3 indicates that the GKR Project, during construction, would generate VMT that equate to less than one-tenth of 1 percent of the VMT presently in Kern and Los Angeles Counties.

### *5.17.4.3 Traffic Impact Analysis*

A traffic impact study has not been prepared for the GKR Project. The GKR Project would not result in any long-term or permanent increase in traffic, would not generally result in an increase in peak hour trips given the typical work hours of construction crews, is not a development project, and would not result in any land use changes.

### *5.17.4.4 Hazards*

No permanent traffic hazards would result from construction and operation of the project.

Lane closures would occur along roadways listed in Table 5.17-1, with a distance to the closest project feature of '0'. SCE will institute traffic management measures during construction of the GKR Project.

#### *5.17.4.5 Accessibility*

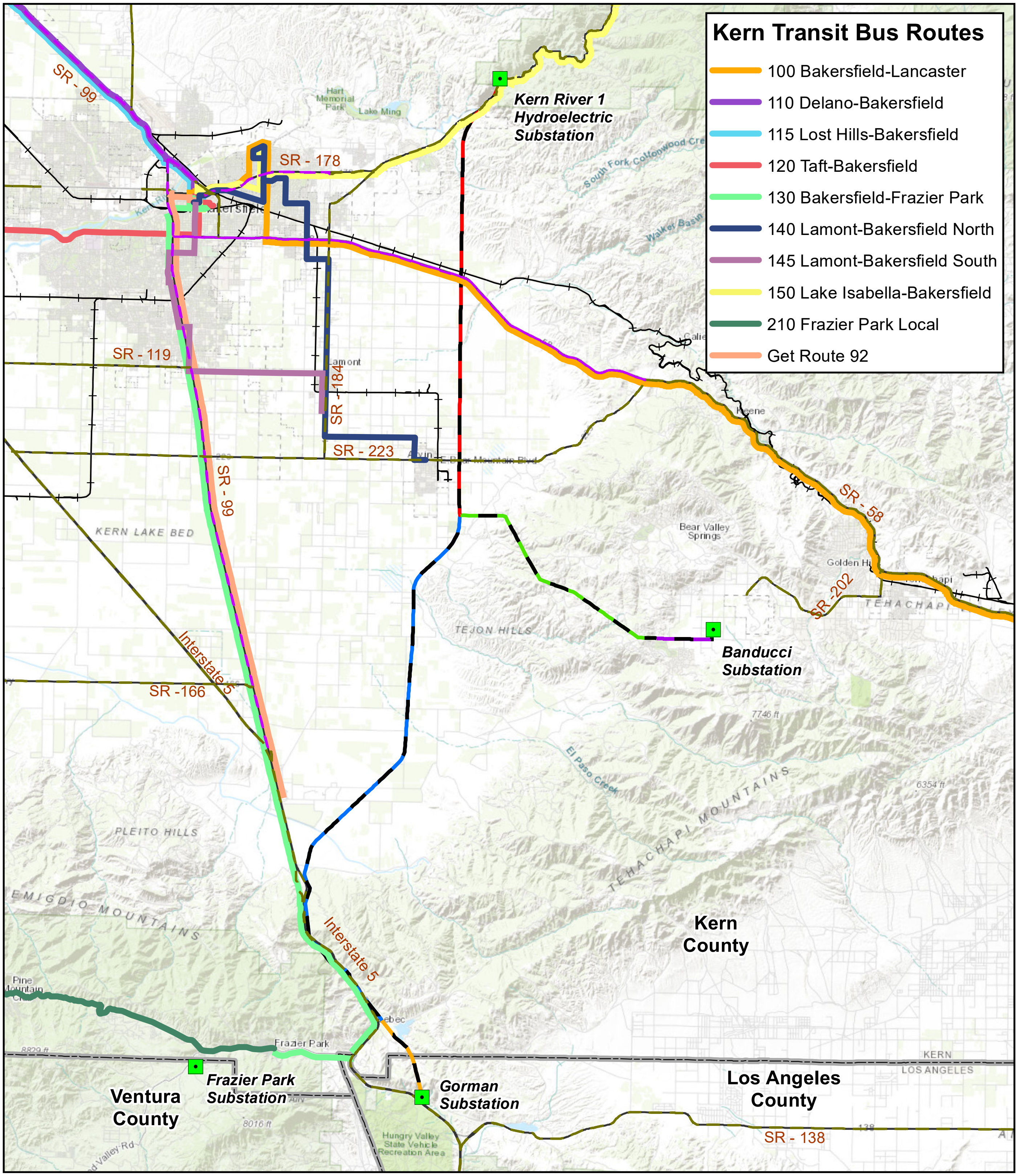
There are no extant bicycle lanes crossed by the GKR Project alignment. There are no developed pedestrian walkways or transit stops that could be closed during construction.

#### *5.17.4.6 Transit Delay*

Kern Transit Route 100, Route 130, and Route 150 could be delayed by construction or operation of the GKR Project. Such closures would be short-term (less than an hour) and generally performed at times of day outside the operating hours of the routes.

### 5.17.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for the Transportation resource area.




## Legend

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Railroads

**Bicycle Access**

- Not Prohibited
- Prohibited
- Counties

N

0 6 12
Miles

# GORMAN-KERN RIVER 66 kV PROJECT

# CIRCULATION SYSTEM

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE
**5.17-1**

T:_ENVSCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-17-1_Circulation System.mxd 06/16/2021

# 5.18 Tribal Cultural Resources

This Section of the PEA discusses tribal cultural resources or other resources potentially of importance to California Native American tribes along the GKR Project alignment, identifies applicable significance thresholds, assesses the GKR Project's impacts to these resources and their significance, and recommends measures to avoid or substantially reduce any effects found to be potentially significant. Assembly Bill (AB) 52 (Gatto 2014, Chapter 532), which was enacted in September 2014, sets forth both procedural and substantive requirements for analysis of tribal cultural resources as defined in Public Resources Code (PRC) section 21074, and consultation with California Native American tribes.

The environmental setting is based on information obtained from the GKR Project description, recent technical studies, and information gathered during outreach conducted by SCE. See Section 5.5, Cultural Resources, for a discussion of cultural resources more broadly, including archaeological and built environment resources.

## 5.18.1 Environmental Setting

### *5.18.1.1 Outreach to Tribes*

PRC Section 5097.91 established the Native American Heritage Commission (NAHC), the duties of which include taking inventory of places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. PRC Section 5097.98 specifies a protocol to follow when the NAHC is notified of a discovery of Native American human remains from a county coroner.

On January 23, 2020, a request for a Sacred Lands File (SLF) search within the GKR Project area was submitted to the NAHC. The NAHC responded on February 13, 2020 stating that the SLF results were negative and provided a list of twenty-six contacts; these contacts are provided in Appendix E. The CPUC will perform additional NAHC and tribal outreach activities at a later date.

### *5.18.1.2 Tribal Cultural Resources*

The GKR Project APE/API is situated along approximately 65.3 miles (105.1 km) of existing subtransmission lines in Kern and Los Angeles counties. Five geographical regions of California are included within the APE/API: Sierra Nevada, Central California Foothills and Coastal Mountains, Central California Valley, Southern California Mountains, and Mojave Basin and Range. These regions are discussed in detail in Section 5.5.1.2.1, Cultural Resources Summary—Physical Setting.

Of the 24 previously recorded resources mapped within the APE/API, 11 were identified as cultural resources. The prehistoric resources (n=8) include bedrock milling features, lithic scatters, and isolated lithic materials. A total of two bedrock milling features, two lithic scatters, and four prehistoric isolates are located within the direct APE/API. The historic resources (n=13) include one historic homestead, one historic barn with farming equipment, one historic concrete pad, one historic landmark marker, and one historic isolate. Three archaeological resources within the APE/API are identified as multi-component (both historic and prehistoric).

#### 5.18.1.2.1 Prehistoric Background

The prehistoric cultural setting of the APE/API is relevant to the Southern South Joaquin Valley cultural area. The prehistory of the region encompasses a period of more than 11,000 years before present (BP), from Paleo-Indian (Late Pleistocene) through European contact (Late Holocene). A discussion of the chronology and key characteristics of this cultural area is presented in Section 5.5.1.2.2, Cultural Resources Summary—Prehistoric Background.

#### 5.18.1.2.2 Ethnographic Study

The GKR Project alignment is located within the traditional territory of five ethnographically distinct Native American groups: Yokut, Kitanemuk, Kawaiisu, Interior/Emigdio Chumash, and Tatavium. For a discussion of each group, refer to Section 5.5.1.2.3, Cultural Resources Summary—Ethnographic Background. The following content provides an ethnographic overview and considers locations that are important to these indigenous groups.

*5.18.1.2.2.1 Overview*

At the start of Spanish colonization in California during the late 18th century, the region was considered home to approximately 300,000 indigenous people, comprising a complex of cultures that encompassed 74 languages and perhaps 500 distinct ethnic groups (Moratto 1984; Mithun 2006). The effects of European colonization in California included population decline due to disease and violence, disruption of traditional ways of life with loss of land and territory, conversion and enslavement by the mission system and later the rancheros in California, and malnutrition and starvation. Ethnographic research of Native American groups within the GKR Project alignment is limited and their boundaries are loosely defined due to their mobile subsistence strategies. Presently, the GKR Project alignment is located within the traditional territory of five Native American groups: Yokut, Kitanemuk, Kawaiisu, Interior/Emigdio Chumash, and Tatavium.

*5.18.1.2.2.2 Locations Important to the Yokut*

The Yokuts population inhabited the San Joaquin Valley as well as the lower Sierra Nevada foothills and are usually divided into three large general groups—Northern Valley, Southern Valley, and Foothills—which were then composed of approximately sixty tribelets (Moratto 1984). Southern Valley Yokuts are stated to traditionally occupy the areas around Kern, Buena Vista, and Tulare lakes, along with some rivers that issue from the southern Sierra Nevada mountain range (Lotta 1949; Monastero et al. 2014; Pearce et al. 2016). There are more than 40 autonomous, linguistically related tribelets, with the Yokuts languages part of the Penutian family of languages (Harvey 2011). The name *Tehachapi* is believed to be a variation on the Yokut word *Tah-hi'tch* or *Tah-heetch*, meaning "Oak Covered Valley" (Latta 1949). At the time of European contact, it is believed at least 15 different Yokut groups inhabited the southern San Joaquin Valley (Kroeber 1976).

There are a few known villages of the Southern Valley Yokuts, including their central village known as *Woilu* that was located in downtown Bakersfield and *Wawcoye*, located on the Rio Bravo Ranch property (Latta 1949). *Wawcoye* would be considered an important location to the Yokuts, in addition to any potential village locations.

*5.18.1.2.2.3 Locations Important to the Kitanemuk*

The Kitanemuk population inhabited portions of the Tehachapi Mountains and the southwestern portion of the Mojave Desert/Antelope Valley by the proto-historic period with consensus suggesting the mountains were the primary occupation areas with the desert region utilized on a seasonal basis (Kroeber 1976; Blackburn and Bean 1978; Sutton 1980). It has also been suggested that the Kitanemuk occupied lower elevation canyons in the western foothills of the Tehachapi Mountains compared to the Kawaiisu, who occupied higher elevations to the northeast (Mason et al. 2001). However, it should be stated that settlement patterns of the pre-contact Kitanemuk are not fully understood.

At least one known Kitanemuk village is located within proximity of the GKR Project alignment, *Nakwalki-ve.* In addition, shrines (*nahwinits*) located within hills, near trails or other isolated places would be significant to the Kitanemuk (Blackburn and Bean 1978).

*5.18.1.2.2.4 Locations Important to the Kawaiisu*

The Kawaiisu occupied the southern Sierra Nevada and Tehachapi Mountains as the core of their territory and branched out into the Mojave Desert to obtain seasonal resources (Zigmond 1986). Their range included the northwestern portion of the North Desert Region of San Bernardino County.

The Kawaiisu practiced a distinctive style of polychromatic (multicolored) rock art that shares many attributes with that of the Chumash (Lee and Hyder 1991). The best-studied Kawaiisu rock art site is Teddy Bear Cave (CA-KER-508), located in the Tomo-Kahni State Historic Park in the southern Sierra Nevada. Considered by the Kawaiisu as the location of creation for their people and the world (Sutton 2001), the Teddy Bear Cave is one of the sites located within Nettle Spring, an archaeological complex. Along with this ceremonial locality, the Nettle Spring site complex also includes a large habitation area (CA-KER-230), which is characterized by numerous rock rings, more than 400 bedrock mortars, and additional rock art (Sutton 2001). Nearby sites include small camps, additional rock art localities, and a cremation site, all of which are potentially related to the Nettle Spring complex.

The Kawaiisu resisted European occupation of their traditional lands, resulting in a number of skirmishes and atrocities against the Kawaiisu (Underwood 2006). While the location of these skirmishes and atrocities are not always fully documented, oral histories within the tribe may identify locations that could be accurate and/or otherwise significant to the Kawaiisu.

*5.18.1.2.2.5 Locations Important to the Interior/Emigdio Chumash*

The Interior Chumash occupied portions of the Southern San Joaquin Valley region, south of the Southern Valley Yokuts. Two Interior Chumash utilized the geographical region around the GKR Project alignment: the Emigdiano and Castac Chumash. The Castac Chumash appear to have occupied the area around Castac Lake and the Tejon Pass up to the mouth of the Grapevine Canyon (Cañada de las Uvas) (Bernard 2008). The Emigdiano Chumash are believed to have occupied the mountains and north-flowing streams and drainages that extend from the San Emigdio Mountains, bordering Castac Lake on the east (Bernard 2008). Ethnographic data are limited for both groups, but knowledge of basic elements of daily life, material culture and ritual activities demonstrate an overall similarity between Chumash groups and some similarity with Kitanemuk culture (Bernard 2008).

Few historic village names are known within this region, and what information is known of these villages comes after secularization of the area (Johnson 2000; Bernard 2008). The historic Interior Chumash village *Mat'apxwelxwel* was located at the mouth of the Grapevine Canyon (Horne 1981; Johnson 1978, 2000a) and could be a location held in reverence by the Interior Chumash. While not many known rock painting sites lie within the region, any such locations could also hold significance for the Interior Chumash (Grant 1978).

*5.18.1.2.2.6 Locations Important to the Tatavium*

It has been suggested that the core territory of the Tatavium is north of the Los Angeles metropolitan area, overlapping the western part of the Angeles National Forest and including the northwest portion of Los Angeles County and parts of Ventura County (King and Blackburn 1978; BioSystems Analysis, Inc 1989; Johnson and Earle 1990). The Tataviam may have also inhabited the La Liebre area during the historic period (King et al. 1974; Sutton 1980; Johnson and Earle 1990). Based on mortuary data in the region, Tataviam possibly held only portions of the foothills and valley floors near Palmdale during the late prehistoric period (Sutton 1980). However, there is much confusion regarding the precise extent of their territory, known as the Castac/Alliklik/Tataviam problem (Bernard 2008).

One Tataviam site, Bowers Cave, located between present-day Newhall and Piru, is located approximately 4.9 miles south of the Gorman Substation. Bowers Cave contained ritual objects that appear to be identical to historically described Chumash ritual objects, leading evidence that the Tataviam participated in Chumash ceremonies (Harvey 2011). Such locations could be considered significant to the Tataviam. Pictograph sites within the Tataviam territory could also hold significance for the tribe.

#### 5.18.1.2.3 Historic Background

Post-Contact history for the state of California is generally divided into three specific periods: the Spanish period (1769–1822), the Mexican period (1822–1848), and the American period (1848–present). For an in-depth discussion of these time frames, please see Section 5.5.1.2.4, Cultural Resources Summary—Historic Background. The history of these time periods is discussed below in relation to tribes within the APE.

Indigenous peoples within California remained relatively isolated from European and Asian cultures until the sixteenth century, with the arrival of Juan Rodriguez Cabrillo and his crew in the San Diego Bay area in 1542. It would take more than 200 years for additional exploration to occur within what was then known as Alta California. By the eighteenth century, exploration and colonization of Alta California was increasing. In 1769, Captain Gaspar de Portolá led a land expedition that included soldiers, missionaries, and civilians into the San Diego area, where the Presidio of San Diego, a fortified military outpost, was established. The first documented expedition into the area around the GKR Project alignment was an army detachment, led by Don Pedro Fages, which passed through the Tejon Pass into the San Joaquin Valley in 1772. Fages left the first written record of exploration in the South San Joaquin Valley (SSJV), where he named the Tejon Pass region Cañada de las Uvas, Grapevine Canyon (Comfort 1934; Harvey 2011; California OHP 2013). Four years later, Spanish missionaries, including Father Francisco Garcés, visited the region. In 1776, he traveled along the trail that Fages had utilized, crossing the Tehachapi Mountains and entering the San Joaquin Valley via Cottonwood Creek and Tejón Canyon on April 26, 1776 (Walker 1946). It was during a visit to the village of *Woilu* that Father Garcés performed the first European baptism in the San Joaquin Valley (Monastero et al. 2014). Multiple subsequent explorations in the early 1800s in the SSJV to recapture escaped neophytes and establish suitable mission sites were overall unsuccessful (McGuire et al. 1990).

These factors formed the background for a series of events that culminated in the 1824 Chumash Revolt, the largest and most widespread native uprising in Alta California (Hornbeck 1989; Stickel and Cooper 1969). This was not the first violent rebellion in California missions or even in missions where Chumash people lived. Armed revolt was rare, but it was undertaken at various times both by native groups living autonomously – away from the missions – and by those who had converted and had subsequently become dissatisfied with conditions at the missions. One of the earliest cases of armed revolt occurred in 1785 at Mission San Gabriel and was instigated by a 24 year-old female shaman named Toypurina (Beebe and Senkewicz 2001, 2007; Castillo 1989; Hackel 2003; Sandos 2007). Toypurina, a shaman who had not been converted, worked in conjunction with Nicholas José, a baptized neophyte who had been a traditional chief of his village. Together they orchestrated a multi-village attack on the mission, aimed at killing all the priests and soldiers. Spanish authorities had received warning of the attack, however, and after scaling the walls and entering the mission quadrangle, the native coalition was trapped and disarmed (Castillo 1989; Sandos 1998). The motivation for the attack was likely quite complex (Hackel 2003), but Toypurina stated explicitly and repeatedly at her trial that she resented the Spanish presence in native lands and wanted them to leave (Beebe and Senkewicz 2007).

## 5.18.2 Regulatory Setting

### *5.18.2.1 Regulatory Setting*

The primary federal and state laws, regulations, and policies that pertain to the GKR Project are summarized in Section 5.5, Cultural Resources. Section 5.5.2, Cultural Resources Regulatory Setting, summarizes regulatory ordinances and other local policies that concern cultural resources, which may also be relevant to tribal cultural resources if tribal cultural resources are determined to also be unique archaeological or historical resources. Tribal cultural resources include sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a tribe. A tribal cultural resource is one that is either: (1) listed on, or eligible for listing on the CRHR or local register of historical resources (see Section 5.5, Cultural Resources, for more information about the CRHR); or (2) a resource that the CEQA lead agency, at its discretion and supported by substantial evidence, determines is significant pursuant to the criteria in PRC Section 5024.1, subdivision (c) (see PRC Section 21074). Further, because tribes traditionally and culturally affiliated with a geographic area may have specific expertise concerning their tribal cultural resources, AB 52 sets forth requirements for notification and invitation to government to government consultation between the CEQA lead agency and geographically affiliated tribes (PRC Section 21080.3.1[a]). Under AB 52, lead agencies must avoid damaging effects to tribal cultural resources, when feasible, regardless of whether consultation occurred or is required.

Tribal cultural resources per PRC Section 21074 (a)(1)(A)–(B) are defined as either of the following:

> 1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
>
> > a) Included or determined to be eligible for inclusion in the CRHR.
> >
> > b) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
>
> 2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.
>
> > a) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.
> >
> > b) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

## 5.18.3 Impact Questions

### *5.18.3.1 Impact Questions*

The significance criteria for assessing the impacts to tribal cultural resources come from the CEQA Environmental Checklist, which notes that a project causes a potentially significant impact if it would:

- Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in Section 5020.1(k), or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1.

In applying the criteria set forth in subdivision (c) Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

#### *5.18.3.2 Additional CEQA Impact Questions*

There are no CPUC-identified additional CEQA impact questions.

### 5.18.4 Impact Analysis

#### *5.18.4.1 Impact Analysis*

##### 5.18.4.1.1 Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in Section 5020.1(k)?

*5.18.4.1.1.1 Construction*

**No Determination.** The CPUC will consult with eligible tribes under PRC Section 21080.3.1 once the Application is complete. Impacts on TCRs are not addressed in this PEA because under AB 52, the CPUC must identify these resources during consultation. As presented in Section 5.18.1 above, Native American cultural resources that might be TCRs are known within or in the immediate vicinity of the GKR Project alignment.

A potential impact would occur if a TCR is located within an area subject to disturbance. SCE would avoid impacts to known TCRs to the greatest extent possible through implementation of APMs TCR-1 and TCR-2. Further, as outlined in Section 5.5, Cultural Resources, APMs CUL-1 through CUL-5 would be implemented and, through doing so, impacts to potential TCRs would be avoided or mitigated.

*5.18.4.1.1.2 Operations*

**No Determination.** SCE is not the CEQA Lead Agency responsible for tribal consultations per PRC Section 21080.3.1, and SCE has not performed any tribal consultation. Therefore, no tribal cultural resources have been identified, and the impacts associated with tribal cultural resources have not been determined.

##### 5.18.4.1.2 Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1?

##### *5.18.4.1.2.1 Construction*

**No Determination.** The CPUC will consult with eligible tribes under PRC Section 21080.3.1 once the Application is complete. Impacts on TCRs are not addressed in this PEA because under AB 52, the CPUC must identify these resources during consultation. As presented in Section 5.18.1 above, Native American cultural resources that might be TCRs are known within or in the immediate vicinity of the GKR Project alignment.

A potential impact would occur if a TCR is located within an area subject to disturbance. SCE would avoid impacts to known TCRs to the greatest extent possible through implementation of APMs TCR-1 and TCR-2. Further, as outlined in Section 5.5, Cultural Resources, APMs CUL-1 through CUL-5 would be implemented and, through doing so, impacts to potential TCRs would be avoided or mitigated.

##### *5.18.4.1.2.2 Operations*

**No Determination.** SCE is not the CEQA Lead Agency responsible for tribal consultations per PRC Section 21080.3.1, and SCE has not performed any tribal consultation. Therefore, no tribal cultural resources have been identified, and the impacts associated with tribal cultural resources have not been determined.

#### *5.18.4.2 Information Provided by Tribes*

SCE has not performed outreach to Tribes.

### 5.18.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for the Tribal Cultural Resources resource area.

Page intentionally left blank.

## 5.19 Utilities and Service Systems

This Section of the PEA describes the utilities and service systems in the area of the GKR Project, as well as the potential impacts that may result during construction and operation of the GKR Project.

### 5.19.1 Environmental Setting

This discussion describes the existing utilities and service systems (electric, natural gas, water, sewage and wastewater treatment, landfills, and other utilities) in the vicinity of the GKR Project area.

#### *5.19.1.1 Utility Providers*

Utility providers that serve the areas along the GKR Project alignment are as follows:

- Electricity, Segments 1-5: SCE
- Natural gas, Segments 1-5: SoCalGas
- Water, Segment 1: Olcese Water District, City of Bakersfield
- Water, Segment 2: Arvin Community Service District (CSD), Arvin-Edison Water Storage District, Wheeler Ridge-Maricopa Water Storage District
- Water, Segment 3: California Parks and Recreation Department—Fort Tejon, Tejon-Castac Water District, Lebec County Water District, Antelope Valley-East Kern Water Agency
- Water, Segment 4: Bear Valley CSD, Tehachapi-Cummings County Water District, Stallion Springs CSD
- Water, Segment 5: Stallion Springs CSD, Tehachapi-Cummings County Water District

#### *5.19.1.2 Utility Lines*

The GKR Project crosses or immediately parallels a host of utility lines; these are displayed in Figure 5.19-1.

##### 5.19.1.2.1 Natural Gas

Natural gas transmission lines intersected by the GKR Project alignment are addressed in Section 5.9.1.4 above. The GKR Project is located within the service territory of SoCalGas; based on the provision of service, natural gas distribution lines may be present in the incorporated cities as well as the communities of Gorman, Lebec, and Stallion Springs.

##### 5.19.1.2.2 Electric

The GKR Project alignment is crossed by a number of transmission lines that are not related to or included under the GKR Project: two SCE 220 kV transmission lines in Segment 1 (Antelope-Magunden No1 and No2), and is crossed by three 220 kV transmission lines (Magunden-Pastoria No1, No2, and No3) and an SCE 500 kV transmission line (Midway-Whirlwind) in Segment 2. The GKR Project alignment crosses and parallels a Pacific Gas and Electric Company 70 kV subtransmission line in Segment 2, and parallels two SCE 220 kV transmission lines in Segment 4 (Antelope-Magunden No1 and No2). In addition, the GKR Project alignment crosses or is co-located with numerous distribution voltage lines.

##### 5.19.1.2.3 Telecommunications

Underground telecommunications lines are found adjacent to existing GKR Project structures in portions of Segments 1, 2, and 5.

#### 5.19.1.2.4 Storm Water

Storm water conveyances are found where the GKR Project alignment is located adjacent to public roadways in Segments 1, 2, 3, 4, and 5.

#### 5.19.1.2.5 Water and Sewer

Water supply and sewerage infrastructure is generally found only in discrete locations across the project alignment such as in the vicinity of the City of Arvin and in the Stallion Springs area.

### *5.19.1.3 Approved Utility Projects*

Approved utility projects within 2 miles of the GKR Project alignment are listed in Section 7.1.1.

### *5.19.1.4 Water Supplies*

The GKR Project alignment is located within two Integrated Regional Water Management (IRWM) regions: the entirety of Segments 1, 2, 4, and 5 and the northern portion of Segment 3 are located within the Kern County IRWM region; the southern portion of Segment 3 is located within the Upper Santa Clara River IRWM region.

#### 5.19.1.4.1 Kern County Integrated Regional Water Management Region

Water demands within the Kern County IRWM region are served by a variety of water purveyors, including the large wholesale agency, the Kern County Water Agency (KCWA) and its member districts (both agricultural, and municipal and industrial [M&I]), irrigation districts, investor-owned water companies, mutual water companies, municipalities and private well owners (Kern County Water Agency 2011). Water is also provided by community service districts. Water demand data for the Kern County IRWM region are presented in Table 5.19-1; agricultural use accounts for the very large majority (greater than 90 percent) of water use in the region.

**Table 5.19-1. Water Demand (acre-feet per year), Kern County IRWM Region**

| Subregion (Project Segments) | 2015 | 2030 |
|---|---|---|
| Kern River Valley (1) | 688 | 940 |
| Greater Bakersfield (2) | 106,404 | 171,109 |
| South County (2, 3) | 755,169 | 759,455 |
| Mountains and Foothills (3) | 14,353 | 21,094 |

Source: Kern County Water Agency 2011

Groundwater accounts for greater than 40 percent of the water supply in the Kern County IRWM; surface water supplies include imported water from the State Water Project (SWP) and the Central Valley Project (CVP) and water from the Kern River and other local streams. Total water demand/use data are unreliable given the preponderance of frequently-unmonitored groundwater extraction. The estimated total storage capacity for the Kern County IRWM region is approximately 50 million acre-feet.

#### 5.19.1.4.2 Upper Santa Clara River Integrated Regional Water Management Region

Water supply in the Upper Santa Clara River IRWM region comes from numerous sources, which include groundwater, imported water, recycled water and, when needed, banking programs. Of these sources, imported water, primarily SWP supplies, makes up the largest portion, with over 50 percent of all supplies as of 2010. Local supplies, consisting primarily of local groundwater, make up approximately 45 percent (Santa Clara River Regional Water Management Group 2014). The short portion of the GKR

Project alignment within the Upper Santa Clara River IRWM is not served by any centralized water purveyor and does not overlie any of the groundwater basins addressed in the IRWM, and thus water supply data (capacity and demand) are not pertinent. Water supply to the few residences in the area is assumed to be provided by individual wells or transported water.

#### 5.19.1.4.3 Wastewater Treatment

The area surrounding the southern portion of Segment 3 in Los Angeles County is not served by a sanitation district; the few residences in this area are on individual systems.

There are 19 wastewater treatment plants within the Kern County IRWM Region (Kern County 2011). In Kern County, the Kern Sanitation Authority operates a wastewater plant serving East Bakersfield in the vicinity of Segment 1. The City of Bakersfield operates two wastewater treatment plants; these have a combined treatment capacity of 57 million gallons per day and current average daily flow of 31 million gallons per day. The City of Arvin owns, and contracts the operation of, a wastewater treatment plant located in the vicinity of Segment 1. In the vicinity of Segments 4 and 5, the City of Tehachapi and Stallion Springs Community Service District each operate a wastewater treatment plant.

### *5.19.1.5 Landfills and Recycling*

The Kern County Public Works Department operates seven landfills throughout the county (Kern County 2017b). The nearest landfill to the GKR Project is the Bena Landfill (Class III), which is located east of the City of Bakersfield, and approximately 2.5 miles from the GKR Project alignment. The Bena Landfill has a permitted capacity of 53 million cubic yards, and a remaining capacity of 32.8 million cubic yards; it is slated for closure in 2046 (CalRecycle 2019). Other landfills in the vicinity include the McKittrick Waste Landfill (remaining capacity of 0.77 million cubic yards; closure date 2059) and the Tehachapi Sanitation Landfill (remaining capacity of 0.52 million cubic yards; closure date 2025).

The Los Angeles County Department of Public Works regulates landfills throughout the county. The nearest landfill to the GKR Project is the Chiquita Canyon Landfill (Class III) located approximately 26.5 miles south of the GKR Project alignment near Castaic (Los Angeles County 2017). The Chiquita Canyon Landfill has a permitted capacity of 63.9 million cubic yards, and a remaining capacity of 8.6 million cubic yards; it is slated for closure in 2040 (CalRecycle 2019).

There are no recycling centers along the GKR Project alignment of a size appropriate to process the mass and volume of recyclable materials that would be generated by the GKR Project.

## 5.19.2 Regulatory Setting

### *5.19.2.1 Regulatory Setting*

Federal, State, and local regulations were reviewed for applicability to the GKR Project. Section 5.10, Hydrology and Water Quality, provides a detailed discussion of regulations related to water quality and storm water discharge.

#### 5.19.2.1.1 Federal

##### *5.19.2.1.1.1 Clean Water Act*

The CWA was originally enacted in 1948 and has been amended numerous times, with significant expansions in 1972 and 1977. The CWA's main objectives are to maintain and restore the chemical, physical, and biological integrity of waters through the authorization of standards. Authority for the implementation and enforcement of the CWA lies primarily with the USEPA and its delegated state and local agencies, namely the SWRCB, and in the GKR Project area, the Central Valley and Los Angeles RWQCB.

#### 5.19.2.1.2 State

##### *5.19.2.1.2.1 California Health and Safety Code § 25150.7(d)(1)*

If treated wood is developed as a waste product, the California Health and Safety Code requires treated wood to be disposed of in either a Class I hazardous waste landfill or in a composite-lined portion of a solid waste landfill that meets RWQCB-specified requirements.

##### *5.19.2.1.2.2 Integrated Waste Management Act of 1989*

The Integrated Waste Management Act of 1989, also known as Assembly Bill (AB) 939, mandates that California's jurisdictions divert 50 percent of their solid waste from landfills. CalRecycle is under the umbrella of the California EPA and is responsible for the implementation of AB939.

##### *5.19.2.1.2.3 California Code of Regulations (Title 27)*

Title 27 (Environmental Protection) of the California Code of Regulations defines regulations for the treatment, storage, processing, and disposal of solid waste. The SWRCB maintains and regulates compliance with Title 27 (Environmental Protection) of the California Code of Regulations. The compliance of the Proposed Action would be enforced by the Central Valley (Region 5) and the Los Angeles (Region 4) RWQCBs.

#### 5.19.2.1.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the GKR Project. Pursuant to GO 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority is preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the GKR Project. Accordingly, the following discussions of local land use regulations is provided for informational purposes only.

##### *5.19.2.1.3.1 Kern County General Plan*

Kern County recognizes the importance of environmental and public health and has developed goals and policies to protect the public from health and safety hazards (Kern County 2009). The Kern County General Plan's Land Use, Open Space, and Conservation Element contains the following:

> GOALS: PUBLIC FACILITIES AND SERVICES
>
> 5. Ensure that adequate supplies of quality (appropriate for intended use) water are available to residential, industrial, and agricultural users within Kern County.
>
> 6. Provide a healthful and sanitary means of collecting, treating, and disposing of sewage and refuse for the residents and industries of Kern County.
>
> 7. Facilitate the provision of reliable and cost effective utility services to residents of Kern County.
>
> 10. Ensure landfill capacity for Kern County residents and industries.
>
> 4.19.5.9Kern County and Incorporated Cities Integrated Waste Management Plan

The Kern County and Incorporated Cities Integrated Waste Management Plan addresses issues pertaining to nonhazardous waste disposal and other waste facilities. The Plan was established in response to the California Integrated Waste Management Act of 1989 (AB 939), and includes the following solid waste elements: Source Reduction and Recycling Element, Household Hazardous Waste Element, Non-disposal Facility Element, Countywide Siting Element, and the Countywide Integrated Waste Management Summary Plan.

*5.19.2.1.3.2 Greater Tehachapi Area Specific and Community Plan*

The GKR Project would be located with portions of the Greater Tehachapi Area Specific and Community Plan boundary; however, the plan does not contain any specific goals or policies relevant to the GKR Project.

*5.19.2.1.3.3 Los Angeles County General Plan*

The Los Angeles County General Plan provides the policy framework and establishes the long-range vision for how and where the unincorporated areas will grow, and establishes goals, policies, and programs to foster healthy, livable, and sustainable communities. The Public Services and Facilities Element contains the following goals and policies:

Goal PS/F 5: Adequate disposal capacity and minimal waste and pollution

Policy PS/F 5.1: Maintain an efficient, safe and responsive waste management system that reduces waste while protecting the health and safety of the public.

Policy PS/F 5.2: Ensure adequate disposal capacity by providing for environmentally sound and technically feasible development of solid waste management facilities, such as landfills and transfer/processing facilities.

Policy PS/F 5.5: Reduce the County’s waste stream by minimizing waste generation and enhancing diversion.

Policy PS/F 5.7: Encourage the recycling of construction and demolition debris generated by public and private projects.

*5.19.2.1.3.4 County of Los Angeles Countywide Integrated Waste Management Plan*

The Countywide Integrated Waste Management Plan is comprised of the County’s and the cities’ solid waste reduction planning documents, an Integrated Waste Management Summary Plan (Summary Plan), and a Countywide Siting Element (CSE). The Summary Plan describes the steps to be taken by local agencies, acting independently and in concert, to achieve the state mandated diversion rate by integrating strategies aimed toward reducing, reusing, recycling, diverting, and marketing solid waste generated within the County. The CSE identifies how the County and the cities within would meet their long-term disposal capacity needs for a 15-year planning period to safely handle solid waste generated in the County that cannot be reduced, recycled, or composted.

On October 21, 2014, the Board of Supervisors adopted the Roadmap to a Sustainable Waste Management Future, establishing a goal to divert 80 percent of solid waste generated in the unincorporated County areas from landfills by 2025, 90 percent by 2035, and 95 percent or more by 2045. The County’s efforts to achieve waste diversion are guided by the new waste management paradigm, which places a greater emphasis on source reduction, reuse, recycling, and otherwise maximizing the benefits and use of materials over disposal.

##### *5.19.2.1.3.5 City of Arvin General Plan*

The City of Arvin General Plan continues the following goals and policies:

> Goal 8 Maintain solid waste collection and disposal services in accordance with California state standards.
>
> Policy CO-8.1 Implement diversion programs related to business collection including commercial onsite recycling and commercial onsite green waste pick up.
>
> Policy CO-8.3 Continue waste management practices that meet or exceed requirements specified by the California Integrated Waste Management Act.

##### *5.19.2.1.3.6 City of Bakersfield General Plan*

The City of Bakersfield General Plan's Public Services and Facilities Element continues a number of Goals, Policies, and implementing actions related to solid waste and the provision of water and wastewater services; none are relevant to the GKR Project.

## 5.19.3 Impact Questions

### *5.19.3.1 Impact Questions*

The significance criteria for assessing the impacts to public services are derived from the CEQA Environmental Checklist. According to the CEQA Checklist, a project would cause a potentially significant impact if it:

- Requires or results in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects
- Does not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years
- Results in the determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the projected demand in addition to the provider's existing commitments
- Generates solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals
- Does not comply with federal, state, and local management and reduction statutes and regulations related to solid waste

### *5.19.3.2 Additional CEQA Impact Question*

The CPUC has identified an additional CEQA significance criterion. According to this additional CEQA significance criterion, a project causes a potentially significant impact if it would:

- Increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts?

## 5.19.4 Impact Analysis

### *5.19.4.1 Impact Analysis*

#### 5.19.4.1.1 Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

*5.19.4.1.1.1 Construction*

**No Impact.** The GKR Project would not require or result in the relocation or construction of new or expanded water or wastewater treatment facilities. Only small volumes of domestic wastewater would be generated and disposed of at a wastewater treatment facility, and the small volume of potable water required during construction would be obtained from existing sources.

The GKR Project would not require or result in the relocation or construction of new or expanded storm water drainage facilities. Storm water drainage facilities are not found along much of the GKR Project alignment, and the GKR Project does not include the development of large-scale impermeable surfaces that would increase the amount of storm water discharge from the site that would require construction of new storm water drainage facilities or expansion of the few existing facilities.

The GKR Project would not require or result in the relocation or construction of new or expanded electric power, natural gas, or telecommunications facilities. In areas where the GKR Project alignment is located parallel to such facilities, the replacement structures installed under the GKR Project would be installed in the existing alignment and proximate to existing structures, and therefore removal of existing or installation of replacement structures would not require the relocation of existing electric power, natural gas, or telecommunications facilities. Therefore, no impacts would occur under this criterion.

*5.19.4.1.1.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.19.4.1.2 Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

*5.19.4.1.2.1 Construction*

**No Impact.** There are no reasonably foreseeable future developments associated with the GKR Project, and no new long-term permanent water supply is needed for the GKR Project.

Water would be used during construction of the GKR Project to control dust on access roads and at work areas, in the construction of concrete foundations, and for washing equipment, among other uses. Water would be most intensively required in the northern portion of Segment 1, the southern portion of Segment 2, and in Segments 3 and 4 for dust control during construction. Work in the agricultural portions of Segments 1 and 2, and work likely to be performed from paved areas along Segment 5 would require lesser volumes of water.

It is estimated that on the order of 350 acre-feet of water would be required during the construction period; this water would be procured through commercial transaction(s) with purveyors along the GKR Project alignment, thus geographically distributing the GKR Project's demand. Review of Urban Water Management Plans covering the GKR Project alignment suggest that supply and demand are generally balanced across the region, and indicate that the majority of water is obtained from aquifers. None of the groundwater basins underlying the GKR Project alignment are identified as being in a critical condition of overdraft (DWR 2016). The review identified that excess groundwater pumping capacity is available along some portions of the GKR Project alignment, that normal-year water supply surpluses are available along other portions of the GKR Project alignment, and that groundwater banking is and has been used to ensure supply during dry and multiple-dry years to make up for reductions in imported surface water volumes.

Given the short construction schedule during which water would be required, and that supplies exceed current local demand along the GKR Project alignment, the GKR Project would have sufficient water supplies available, and therefore no impacts would occur under this criterion.

###### *5.19.4.1.2.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

##### 5.19.4.1.3 Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

###### *5.19.4.1.3.1 Construction*

**No Impact.** As previously discussed, construction of the GKR Project would not generate significant amounts of wastewater. Portable toilets would be provided for on-site use by construction workers and would be maintained by a licensed sanitation contractor. Minimal wastewater would be generated, and construction of the GKR Project would not result in discharge of concentrated wastewater or large volumes of wastewater to a wastewater treatment provider. SCE would work with SCE-approved vendors and subcontractors for the handling of wastewater. Wastewater treatment plants in the GKR Project area currently have excess capacity; because of the excess capacity available at existing wastewater treatment plants, and because of the small volumes of wastewater that would be transported for treatment, no wastewater treatment provider along the GKR Project alignment would be asked or would need to make a determination regarding adequate capacity, and therefore, no impact would occur under this criterion.

###### *5.19.4.1.3.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

##### 5.19.4.1.4 Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

###### *5.19.4.1.4.1 Construction*

**No Impact.** There are no State or local standards that establish numerical thresholds related to the generation of solid waste.

The landfill(s) at which the GKR Project's solid waste and excavated materials will be disposed are not known at this time. However, the landfills described above in proximity to the GKR Project alignment have in excess of 25 million cubic yards of permitted capacity remaining. Much of the material generated during the GKR Project would be diverted from local landfill disposal through recycling of removed towers, conductor, and other materials. Because of the large surplus capacity available at the landfills proximate to the GKR Project alignment, the GKR Project would not generate solid waste in excess of the capacity of local infrastructure.

Assembly Bill 341 established a policy goal for the state that not less than 75 percent of solid waste generated be source reduced, recycled, or composted by the year 2020; the Bill also notes that this goal shall remain at 50 percent for local jurisdictions.

Kern and Los Angeles counties both have solid waste diversion plans. Much of the material removed as part of the GKR Project—including the steel members from removed lattice structures and the metallic conductor—will be recycled. The very large majority of the mass and volume of solid waste generated by the GKR Project that may not be recycled or otherwise diverted from the waste stream would be accounted for by removed wood poles. As stated in Section 3.5.14.1, the existing wood poles removed under the GKR Project would be either reused by SCE; returned to the manufacturer; disposed of in a Class I hazardous waste landfill; disposed of in the lined portion of a RWQCB-certified municipal landfill; or, because they are an exempt hazardous waste, disposed of at an SCE-approved landfill. It is unlikely that these poles will be recycled or returned to the manufacturer given the age and condition of the poles, therefore they will not be diverted from the waste stream. In 2014, the last year for which data are available, 88 million tons of waste was generated in the State. The mass of wood poles to be removed is approximately 298 tons, or less than 0.003 percent of all waste generated. Given the very small percentage of the total waste generated in the State accounted for by the poles subject to disposal, the GKR Project would not impair solid waste reduction goals at the State level. At a local level, the mass of poles to be removed and disposed is less than 0.01 percent of all waste disposed in Kern and Los Angeles counties in 2017 (CalRecycle 2019). Given the short construction period, the GKR Project would not impair the long-term attainment of local solid waste reduction goals.

Because landfills in in proximity to the GKR Project alignment have in excess of 25 million cubic yards of permitted capacity remaining, and because much of the material generated under the GKR Project would be diverted from landfill disposal through recycling of steel, aluminum, copper, and other materials, and because the mass of materials likely to be included in the GKR Project waste stream represent a very small percentage of waste generated and disposed annually in Kern County and Los Angeles County, no impacts would occur under this criterion.

##### *5.19.4.1.4.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts would be realized under this criterion during operations and maintenance.

#### 5.19.4.1.5 Would the project comply with federal, state, and local statutes and regulations related to solid waste?

##### *5.19.4.1.5.1 Construction*

**No Impact.** As previously discussed, solid waste produced during construction would be disposed of at one or more licensed landfill(s). Management and disposal of solid waste would comply with all applicable federal, state, and local statutes and regulations. Thus, the GKR Project would not violate any solid waste statutes or regulations. Therefore, no impact would occur during construction of the GKR Project.

*5.19.4.1.5.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.19.4.1.6 Would the project increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts?

*5.19.4.1.6.1 Construction*

**No Impact.** No aspect of construction would increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts.

*5.19.4.1.6.2 Operations*

**No Impact.** Collocated pipelines sharing, paralleling, or crossing high voltage power line ROWs may be subject to electrical interference from electrostatic coupling, electromagnetic inductive, and conductive effects. If the interference effects are high enough, they may compromise the integrity of the pipeline. The severity of interference effects is a function of the electric lines' operating amperage, the separation distance between the electric line and pipeline, the resistivity of the soil, the length of collocation, and the angle at which the electric line and pipeline cross each other.

The subtransmission lines included under the GKR Project are operated at 540 amperes; the subtransmission lines included under the GKR Project will, following construction, be operated at the same amperage as they are presently operated. The infrastructure to be installed under the GKR Project will be located in the same alignment as the existing infrastructure, and thus will be installed in the same soils and will have the same separation distances, collocated lengths, and crossing angles as are currently present. Therefore, the operation of the infrastructure installed under the GKR Project would not increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts, and no impacts would be realized under this criterion.

### *5.19.4.2 Utility Relocation*

Conflicts with existing utility infrastructure that is not included under the GKR Project as addressed in Chapter 3 have not been identified, and thus the GKR Project will not require the relocation of any utilities except those addressed in Chapter 3.

### *5.19.4.3 Waste*

The types of waste that would be generated under the GKR Project are addressed in Section 3.5.14. The disposal of treated wood poles is addressed in Section 5.19.4.1.4. The approximate volumes and masses of waste that would be generated under the GKR Project are addressed in Sections 3.5.14 and 5.19.4.1.4 above; these Sections also address the amount of waste materials that would be disposed of and recycled.

### 5.19.4.4 Water Supply

#### 5.19.4.4.1 Estimate of the amount of water required for project construction and operation, and potential water supply source(s).

The estimated amount of water required for GKR Project construction is provided above in Section 5.19.4.1.2. No additional amounts of water above those currently consumed during extant O&M activities would be required during the O&M of the subtransmission lines included under the GKR Project.

The potential water supply sources include the water purveyors and utilities listed above in Section 5.19.1.4 as well as private owners of water. In addition, wastewater treatment plants may be a source of water supply (i.e., a source of reclaimed or recycled water) for the GKR Project. The water supply sources will be identified by SCE's construction contractor during the pre-construction planning process.

#### 5.19.4.4.2 Evaluation of the ability of the water supplier to meet the project demand under a multiple dry year scenario.

Because individual water suppliers are not identified at this time, SCE has examined the Regional Urban Water Management Plans across the GKR Project alignment to assess the ability of water suppliers operating in the areas covered by those Plans to meet the GKR Project's demands under a multiple dry year scenario. The Plans reviewed include the Bakersfield District 2015 Urban Water Management Plan, the Antelope Valley-East Kern Water Agency 2015 Urban Water Management Plan, and the Greater Tehachapi Area 2015 Regional Urban Water Management Plan.

The Bakersfield District 2015 Urban Water Management Plan encompasses a portion of Segment 1. The Plan forecasts balanced supply and demand in 2020, 2025, 2030, and 2035 under a multiple dry year scenario; the Plan presents matching growth in both supply and demand. This supply—demand matching suggests that the water supplier has the ability to meet increasing demand over time, and would have the ability to meet the small, short-term demand of the GKR Project for work in the area covered under the Plan.

The Antelope Valley-East Kern Water Agency 2015 Urban Water Management Plan encompasses the southern portion of Segment 3. The Plan forecasts supply deficiencies in 2020, 2025, 2030, and 2035 ranging from 9,330 to 29,310 acre-feet per year under a multiple dry year scenario. The Plan also notes that the Antelope Valley-East Kern Water Agency "provides a supplemental water supply to retail agencies. It is anticipated that the difference will be made up by increased groundwater pumping (recovery of banked supplies or return flows), and/or reductions in demand by the retail agencies." There is no centralized water service in that portion of the Plan area crossed by the GKR Project alignment; water demand for work in this area would be met through commercial arrangements with purveyors outside the area.

The Greater Tehachapi Area – 2015 Regional Urban Water Management Plan encompasses the eastern portion of Segment 4 and the entirety of Segment 5. In the Plan, the Tehachapi-Cummings County Water District forecasts supply deficiencies in 2020, 2025, 2030, and 2035 ranging from 1,417 to 4,360 acre-feet per year under a multiple dry year scenario. The Plan also notes that the "[d]ifference is proposed to be made up by recovery of previously banked groundwater supplies and/or reductions in demand due to dry year conditions." All of the retail water suppliers included in the Plan (including the City of Tehachapi, Golden Hills CSD, and Stallion Springs CSD, which serve portions of the GKR Project alignment) forecast balanced supply and demand in 2020, 2025, 2030, and 2035 under a multiple dry year scenario. These retail water suppliers rely in large part on groundwater resources; extractions from neither the Cummings Basin nor the Tehachapi Basin have reached the safe yield established for the basins (Tehachapi-Cummings County Water District 2019a and b). This suggests that despite the surface water supply deficiency forecast by the District, the retail water suppliers would have the ability to meet the small, short-term demand of the GKR Project for work in their areas from groundwater resources.

#### 5.19.4.4.3 Analysis of the GKR Project meeting the criteria for consideration as a project subject to Water Supply Assessment Requirements under Water Code Section 10912.

The GKR Project does not meet the criteria for consideration as a project subject to Water Supply Assessment Requirements under Water Code Section 10912. Section 10912 states:

> For the purposes of this part, the following terms have the following meanings:
>
> (a) "Project" means any of the following:
>
> (1) A proposed residential development of more than 500 dwelling units.
>
> (2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
>
> (3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
>
> (4) A proposed hotel or motel, or both, having more than 500 rooms.
>
> (5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
>
> (6) A mixed-use project that includes one or more of the projects specified in this subdivision.
>
> (7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project

No SCE project meets the definition of a "Project" per (1) through (6).

Regarding (7): Per the CDWR's *Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001 to assist water suppliers, cities, and counties in integrating water and land use planning*

> …it is generally acknowledged that one acre-foot of water can serve two to three households on an annual basis; therefore, one dwelling unit typically consumes .3 to .5 acre-feet of water per year, depending upon several factors, including the regional climate.

Water Code Section 10910(c)(3) states in relevant part:

> [the] water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project…

By this measure, a 500 dwelling unit project would demand up to 250 acre-feet of water per year; over a 20-year project period, a 500 dwelling unit project would demand up to 5,000 acre-feet. As presented above, it is estimated that the GKR Project would demand approximately 350 acre-feet of water over the construction period, and would present no new water demand during operations. Therefore, the GKR Project would not demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project, and thus the GKR Project does not meet the criteria for consideration as a project subject to Water Supply Assessment Requirements under Water Code Section 10912. Accordingly, no Water Supply Assessment has been developed for the GKR Project.

### *5.19.4.5 Cathodic Protection*

Collocated pipelines sharing, paralleling, or crossing high voltage power line ROWs may be subject to electrical interference from electrostatic coupling, electromagnetic inductive, and conductive effects. If the interference effects are high enough, they may compromise the integrity of the pipeline. The severity of interference effects is a function of, among other factors, the electric lines' operating amperage; the separation distance between the electric line and pipeline and the length of collocation; and the angle at which the electric line and pipeline cross each other.

#### 5.19.4.5.1 Operating Amperage

The subtransmission lines included under the GKR Project are and will be operated at 540 amperes; this indicates a 'high' relative severity of high-voltage alternating current interference.

#### 5.19.4.5.2 Separation Distance and Length of Collocation

With the exception of an approximately 1.5-mile long portion of Segment 3, the GKR Project alignment is located greater than 1,000 feet from any hydrocarbon transmission pipeline, and thus has a very low severity ranking.

In Segment 3, approximately 7,800 feet of the GKR Project alignment is located within 1,000 linear feet of a liquid hydrocarbon transmission pipeline. Of this 7,800 feet,

- Approximately 1,250 feet of the alignment is located nearer than 100 feet; the length of collocation presents a medium severity ranking but the distance indicates a high severity ranking.
- Approximately 4,100 feet of the alignment is located between 100 and 500 feet; the length of collocation presents a medium severity ranking and the distance indicates a medium severity ranking.
- Approximately 2,500 feet is located between 500 and 1,000 feet; the length of collocation presents a medium severity ranking and the distance indicates a low severity ranking.

#### 5.19.4.5.3 Crossings

The GKR Project alignment crosses, at 11 locations, liquid and gaseous hydrocarbon transmission pipelines. Of these 11 crossings, 5 are at angles with a relative severity ranking of low; 4 are at angles with a relative severity ranking of medium; and 2 are at angles with a relative severity ranking of high.

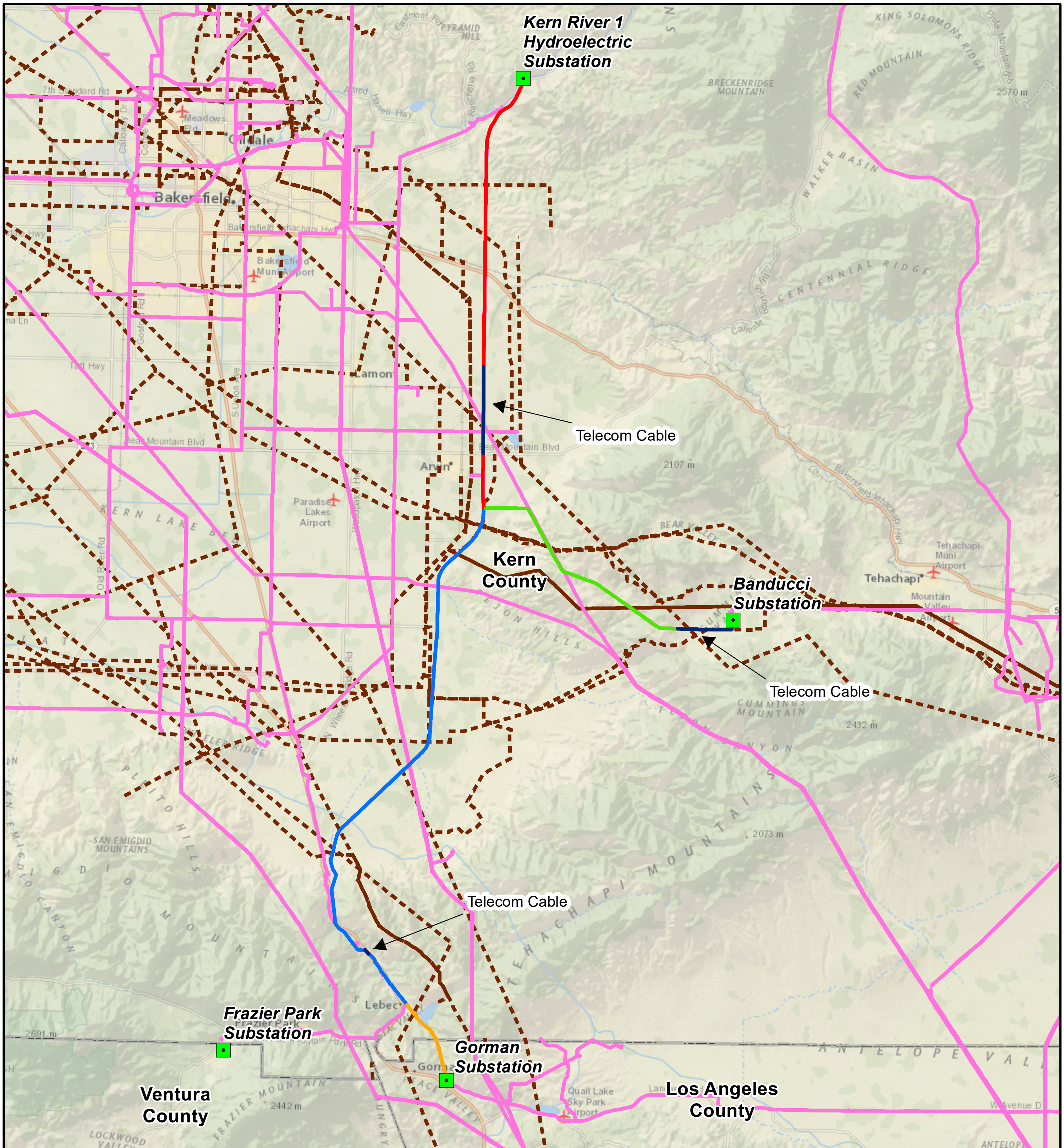
#### 5.19.4.5.4 Analysis

A single liquid hydrocarbon pipeline, as a function of its location adjacent and parallel to an existing GKR Project subtransmission line, is potentially subject to experiencing corrosion due to the proximity of the subtransmission line. Because the operational characteristics of the subtransmission lines would not be modified under the GKR Project, any potential corrosion risk would not be increased by the GKR Project, and thus no cathodic protection measures would be implemented.

## 5.19.5 CPUC Draft Environmental Measures

SCE will implement the following CPUC-identified Draft Environmental Measure during construction of the GKR Project:

**Notify Utilities with Facilities Above and Below Ground.** The Applicant shall notify all utility companies with utilities located within or crossing the project ROW to locate and mark existing underground utilities along the entire length of the project at least 14 days prior to construction. No subsurface work shall be conducted that would conflict with (i.e., directly impact or compromise the integrity of) a buried utility. In the event of a conflict, areas of subsurface excavation or pole installation shall be realigned vertically and/or horizontally, as appropriate, to avoid other utilities and provide adequate operational and safety buffering. In instances where separation between third-party utilities and underground excavations is less than 5 feet, the Applicant shall submit the intended construction methodology to the owner of the third-party utility for review and approval at least 30 days prior to construction. Construction methods shall be adjusted as necessary to assure that the integrity of existing utility lines is not compromised.




## Legend

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Telecom Cable
- Transmission Lines
- Natural Gas Pipelines
- Counties

N

0 10

Miles

**GORMAN-KERN RIVER 66 kV PROJECT**

**UNCONNECTED UTILITIES AND OTHER INFRASTRUCTURE**

ARCADIS

SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

**FIGURE 5.19-1**

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-19-1_UnconnectedUtilities.mxd 11/1/2021

## 5.20 Wildfire

This Section of the PEA describes the wildfire-related setting in the area of the GKR Project, as well as the potential impacts that may result during construction and operation of the GKR Project.

### 5.20.1 Environmental Setting

Emergency response plans and evacuation plans are addressed in Section 5.9, Hazards and Hazardous Materials. Section 5.10, Hydrology and Water Quality, addresses topics related to flooding, runoff, and drainage.

#### *5.20.1.1 High Fire Risk Areas and State Responsibility Areas*

Within California, FHSZs are designated by CAL FIRE. The majority of the GKR Project alignment is located within the CAL FIRE moderate or high fire hazard severity zones; the southern portion of Segment 3 is located in an area designated as a very high fire hazard severity area. Those portions of Segments 1 and 2 that traverse agricultural areas are unzoned. Tabular information on the miles of GKR Project alignment located within these zones is presented in Table 5.20-1, and shown graphically on Figure 5.20-1. Wildland-urban interface data along the GKR Project alignment are presented in Figureset 5.20-2.

**Table 5.20-1. Miles of GKR Project Alignment within Designated Fire Hazard Severity Zones**

<table>
<tr><th>Project Segment</th><th>Fire Hazard Severity Zone</th><th>Distance (miles)</th><th>SRA</th><th>LRA</th><th>FRA</th><th>CPUC FTA</th></tr>
<tr><td>1</td><td>High</td><td>1.80</td><td rowspan="3">5.26</td><td rowspan="3">14.70</td><td rowspan="3">0.38</td><td rowspan="3">Elevated</td></tr>
<tr><td>1</td><td>Moderate</td><td>3.54</td></tr>
<tr><td>1</td><td>Unzoned</td><td>15.01</td></tr>
<tr><td>2</td><td>High</td><td>7.67</td><td rowspan="2">11.46</td><td rowspan="2">15.37</td><td rowspan="2">0.08</td><td rowspan="2">Elevated</td></tr>
<tr><td>2</td><td>Unzoned</td><td>15.54</td></tr>
<tr><td>3</td><td>Very High</td><td>2.88</td><td rowspan="3">4.03</td><td rowspan="3">0.00</td><td rowspan="3">0.00</td><td rowspan="3">Elevated</td></tr>
<tr><td>3</td><td>High</td><td>0.00</td></tr>
<tr><td>3</td><td>Moderate</td><td>1.15</td></tr>
<tr><td>4</td><td>High</td><td>9.69</td><td rowspan="2">10.22</td><td rowspan="2">1.11</td><td rowspan="2">0.00</td><td rowspan="2">Extreme<br>Elevated</td></tr>
<tr><td>4</td><td>Moderate</td><td>0.53</td></tr>
<tr><td>5</td><td>High</td><td>2.06</td><td rowspan="2">2.25</td><td rowspan="2">0.75</td><td rowspan="2">0.00</td><td rowspan="2">Extreme</td></tr>
<tr><td>5</td><td>Moderate</td><td>0.94</td></tr>
</table>

Abbreviations:
FRA: Federal Responsibility Area
FTA: Fire Threat Area
LRA: Local Responsibility Area
SRA: State Responsibility Area

CPUC Fire-Threat Map data are presented in Figure 5.20-3; as seen in this figure, the eastern portion of Segment 4 and the entirety of Segment 5 are located in CPUC-designated Fire Threat Area Tier 3 – Extreme areas. The northern portion of Segment 1, the southern portion of Segment 2, the entirety of Segment 3, and the central portion of Segment 4 are located in CPUC-designated Fire Threat Area Tier 2 – Elevated areas No other portion of the GKR Project is located in a CPUC-designated Fire Threat Area.

SCE has not independently identified any high FHSZ areas along the GKR Project alignment.

Portions of Segments 1, 2, the entirety of Segment 3, the majority of Segment 4, and portions of Segment 5 are identified as State Responsibility Areas; these are shown in Figure 5.20-4.

### 5.20.1.2 Fire Occurrence

Fires that have overlapped the GKR Project alignment are shown in Figure 5.20-5; details of these fires are presented in Table 5.20-2.

**Table 5.20-2. Wildfires Along the GKR Project Alignment**

| Name | Year | Location | Ignition Source/Location | Amount of Land Burned (Acres) |
|---|---|---|---|---|
| Base | 2010 | Kern County | Equipment Use / Unknown | 150 |
| Breckenridge Complex | 2011 | Kern County | Lightning / Unknown | 25,230 |
| Comanche | 2011 | Kern County | Lightning / Unknown | 25,939 |
| Rancho | 2013 | Kern County | Smoking / Unknown | 712 |
| Water | 2013 | Kern County | Unknown / Unknown | 613 |
| Gorman | 2016 | Los Angeles County | Unknown / Unknown | 5 |
| Gorman | 2017 | Los Angeles County | Unknown / Unknown | 150 |
| Switch | 2017 | Kern County | Unknown / Unknown | 10 |
| Tejon | 2017 | Kern County | Unknown / Unknown | 8 |
| Towerline | 2017 | Kern County | Unknown / Unknown | 2 |

Source: NPS 2020

### 5.20.1.3 Fire Risk

The GKR Project proposes to rebuild existing subtransmission lines in the same alignment as existing subtransmission lines; because the subtransmission lines proposed to be rebuilt are existing, they are an inherent component of the baseline fire risk in the area, and their rebuilding with modern infrastructure installed to current CPUC Rules will not negatively alter the baseline fire risk in the area.

Scott and Burgan Fire Behavior Fuel Model data for the area along the GKR Project alignment are presented in Figure 5.20-6. Values of wind direction and speed, relative humidity, and temperature for the Bakersfield/Meadows weather station (station 72384023155, representative of Segments 1 and 2), Tehachapi Municipal Airport (station 74917100479, representative of Segment 5), and Sandberg (station 72383023187, representative of Segment 3), for the previous 10 years, gathered hourly, are presented in Appendix M.

Table 5.20-3 lists those vegetation types included in the USDA Fire Effects Information System that are found along the GKR Project alignment; these are shown in Figureset 5.20-7: USDA Fire Effects Information System Vegetation Types.

**Table 5.20-3. USDA Fire Effects Information System Vegetation Types**

| |
|---|
| Bau Developed-Low Intensity |
| Bau Developed-High Intensity |
| Dgr Urban Herbaceous |
| Bau Developed-Medium Intensity |
| Bau Developed-Roads |
| Dsh Urban Shrubland |
| Sh Northern and Central California Dry-Mesic Chaparral |
| Dtm Urban Mixed Deciduous-Evergreen Forest |
| Sps Mediterranean California Sparsely Vegetated Systems |
| Sh California Ruderal Grassland Meadow & Scrub |
| Tr California Lower Montane Foothill Pine Woodland and Savanna |
| Tr Californian Ruderal Forest |
| Dab Orchard |

**Table 5.20-3. USDA Fire Effects Information System Vegetation Types**

| |
|---|
| He California Central Valley and Southern Coastal Grassland |
| Da Vineyard |
| Da Row Crop |
| Da Wheat |
| Dsh Developed Ruderal Shrubland |
| Dab Pasture and Hayland |
| Dab Fallow/Idle Cropland |
| Sh Western North American Ruderal Wet Shrubland Meadow & Marsh |
| Sh Recently Burned-Shrub Cover |
| He Recently Burned-Herb and Grass Cover |
| He Temperate Pacific Freshwater Emergent Marsh |
| Dtd Urban Deciduous Forest |
| Dtm Developed Ruderal Deciduous-Evergreen Forest |
| Dgr Developed Ruderal Grassland |
| Dtc Developed Ruderal Evergreen Forest |
| Dtc Urban Evergreen Forest |
| Tr California Central Valley Riparian Woodland and Shrubland |
| Tr Mediterranean California Mixed Oak Woodland |
| Tr Recently Burned-Tree Cover |
| Sh Southern California Coastal Scrub |
| Sh Southern California Dry-Mesic Chaparral |
| Dgr Developed Ruderal Herbaceous Wetland |
| Tr Central and Southern California Mixed Evergreen Woodland |
| Tr California Montane Riparian Systems |
| He Temperate Pacific Subalpine-Montane Wet Meadow |
| Tr Southern California Oak Woodland and Savanna |
| Sh California Mesic Chaparral |
| Sh Sonora-Mojave Semi-Desert Chaparral |
| Tr Great Basin Pinyon-Juniper Woodland |
| Ba Open Water |

### *5.20.1.4 Values at Risk*

Communities near the GKR Project alignment, which include structures and other improvements (including utility-owned infrastructure) at risk from wildfire, are identified in Section 5.14 and are shown on Figure 5.14-1; sensitive receptors, which are another proxy for structures, are shown in Figureset 5.13-1. The vulnerability of these structures and improvements is typical for the region, and is dependent on the condition of the structures and improvements and their physical siting. There is no rare habitat along the GKR Project alignment that is at risk from wildfire.

### *5.20.1.5 Evacuation Routes*

The GKR Project alignment crosses a number of identified evacuation routes in Segment 1 including, from north to south, SR-178, Edison Highway, SR-58, E. Panama Lane, Panama Road, Buena Vista Road, and SR-223. No other identified evacuation routes are crossed by the GKR Project alignment. The GKR Project alignment crosses Interstate 5, which is identified by Los Angeles County as a disaster route.

The following public roadways crossed by the GKR Project alignment lack a secondary point of access or exit: Badger Court, Quail Drive, Jacks Hill Road, Elkhorn Place, Longhorn Lane, and Angus Court in Segment 4, and Birkdale Court in Segment 5.

### 5.20.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the GKR Project.

#### *5.20.2.1 Regulatory Setting*

##### 5.20.2.1.1 Federal

Please see Sections 5.9.2.1.1 and 5.10.2.1.1

##### 5.20.2.1.2 State

Senate Bill 901, enacted in 2018, adopted new provisions of Public Utilities Code Section 8386 requiring all electric utilities to prepare, submit and implement annual wildfire mitigation plans that describe the utilities' plans to construct, operate and maintain their electrical lines and equipment in a manner that will help minimize the risk of catastrophic wildfires associated with those electrical lines and equipment.

##### 5.20.2.1.3 Local

Please see Sections 5.9.2.1.3 and 5.10.2.1.3.

#### *5.20.2.2 CPUC Standards*

In October 2007, devastating wildfires driven by strong Santa Ana winds burned hundreds of square miles in Southern California. Several of the worst wildfires were reportedly ignited by overhead utility power lines and aerial communication facilities in close proximity to power lines. In response to these wildfires, the CPUC initiated Rulemaking (R.) 08-11-005 to consider and adopt regulations to protect the public from potential fire hazards associated with overhead powerline facilities and nearby aerial communication facilities.

Beginning in 2009, the CPUC issued several decisions in R.08-11-005 that together adopted dozens of new fire-safety regulations. Most of the adopted fire-safety regulations consisted of new or revised rules in GO 95. Several of the adopted fire-safety regulations apply only to areas, referred to as "high fire-threat areas," where there is an elevated risk for power line fires igniting and spreading rapidly. These high fire-threat areas are designated by several maps that were adopted on an interim basis. Each of the interim maps covers a different part of the State and uses its own methodology for identifying high fire-threat areas, presenting consistency and potential enforcement issues. To address these issues, the CPUC also commenced the development of a single statewide fire-threat map to designate areas where (1) there is an elevated risk for destructive power line fires, and (2) where stricter fire-safety regulations should apply.

In May 2015, the CPUC closed R.08-11-005 and initiated successor rulemaking R.15-05-006 to complete the outstanding tasks in R.08-11-005. The general scope of R.15-05-006 was to address the following matters carried over from the scope of R.08-11-005: (1) develop and adopt a statewide fire-threat map that delineates the boundaries of a new High Fire-Threat District (HFTD) where the previously adopted regulations will apply, (2) determine the need for additional fire-safety regulations in the HFTD, and (3) revise GO 95 to include a definition and maps of the HFTD, as well as any new fire-safety regulations. The scope and schedule for R.15-05-006 was divided into two parallel tracks. One track focused on the development and adoption of a statewide fire-threat map. The second track focused on the identification, evaluation, and adoption of fire-safety regulations in the HFTD.

On December 21, 2017, the CPUC issued Decision (D.) 17-12-024 adopting regulations to enhance fire-safety in the HFTD, effectively completing the second track of R.15-05-006 described above. On January 19, 2018 the CPUC adopted, via Safety and Enforcement Division's (SED) disposition of a Tier 1 Advice

Letter, the final CPUC Fire-Threat Map. The adopted CPUC Fire-Threat Map, together with the map of Tier 1 High Hazard Zones (HHZs) on the USFS- California Department of Forestry and Fire Protection's (CAL FIRE) joint map of tree mortality HHZs, comprise the HFTD Map where stricter fire-safety regulations apply.

#### 5.20.2.2.1 Inspection and Maintenance Standards

D. 96-11-021 and D.97-03-070 establish inspection cycles and record-keeping requirements for utility distribution equipment, which are contained in GO 165. In general, utilities must patrol (walk, drive, or fly by) their systems once a year (in urban areas) or once every two years (in rural areas). Utilities must conduct detailed inspections every 3-5 years, depending on the type of equipment. For detailed inspections, utilities' records must specify the condition of inspected equipment, any problems found, and a scheduled date for corrective action. The utility must submit an annual report summarizing inspections made, equipment condition observed, and repairs made. Utilities are required to make intrusive inspections of power poles; no pole should go over 25 years before its first intrusive inspection, and once passed, every 20 years thereafter. Currently GO 165 is being studied for revisions to optimize the Commission's ability to identify areas on noncompliance with its safety standards GO 95 Overhead and GO 128 Underground and its inspection, maintenance and repair standards GO 165.

#### 5.20.2.2.2 Tree Trimming Standards

D. 97-01-044 of Investigation 94-06-012 establishes standards for trimming trees near power lines, issued as a revision to Rule 35 of GO 95-A. For lines at voltages higher than 750 volts, in general, trees must be trimmed so as to provide no less than 18 inches of clearance from lines under normal annual weather variations. When trimmed, where practicable, trees must be 4 to 15 feet from power lines over 2,400 volts (clearances vary with voltage). Detailed rules are contained in Appendix A of the decision.

## 5.20.3 Impact Questions

### *5.20.3.1 Impact Questions*

The significance criteria for assessing the impacts to public services are derived from the CEQA Environmental Checklist. According to the CEQA Checklist, a project would cause a potentially significant impact if, located in or near state responsibility areas or lands classified as very high fire hazard severity zones, the GKR Project would:

- Substantially impair an adopted emergency response plan or emergency evacuation plan?
- Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?
- Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?
- Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

### *5.20.3.2 Additional CEQA Impact Questions*

There are no CPUC-identified additional CEQA impact questions.

## 5.20.4 Impact Analysis

### *5.20.4.1 Impact Analysis*

#### 5.20.4.1.1 Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

*5.20.4.1.1.1 Construction*

**Less than Significant Impact.** The GKR Project alignment crosses a number of evacuation routes, including SR-178, SR-158, and several major west-east oriented roadways in Segment 1; no other identified evacuation routes are crossed by the GKR Project alignment.

As discussed in Section 5.17, the GKR Project would not be expected to significantly impact traffic circulation or increase demands on existing emergency response services during temporary construction activities, and would not significantly impact emergency access in the area or increase the demand for existing emergency response services. Therefore, the GKR Project would not substantially impair an adopted emergency response plan or emergency evacuation plan, and impacts would be less than significant.

Although it is not anticipated that construction activities would result in the blockage of any roadways (including those identified as evacuation routes) that could be used in the case of an emergency, in the event that any construction-related activity may result in such a blockage or closure, SCE would implement APM TRA-1.

*5.20.4.1.1.2 Operations*

**No Impact.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines included under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no new impacts would be realized under this criterion during operations and maintenance.

#### 5.20.4.1.2 Would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

*5.20.4.1.2.1 Construction*

**No Impact.** No components of the GKR Project are designed for human occupancy; therefore, no impacts would occur under this criterion.

*5.20.4.1.2.2 Operations*

**No Impact.** No components of the GKR Project are designed for human occupancy; therefore, no impacts would be realized under this criterion.

#### 5.20.4.1.3 Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

*5.20.4.1.3.1 Construction*

**No Impact.** The GKR Project does not include or require the installation or maintenance of associated infrastructure such as roads, fuel breaks, emergency water sources, non-Project power lines, or other utilities; the entirety of the GKR Project is described in Chapter 3. Therefore, because no such associated infrastructure would be installed under the GKR Project, no impacts would occur under this criterion.

Further, as described in Section 5.9.4.1.7, the GKR Project would not present a significant risk of loss, injury, or death by exposing people or structures, either directly or indirectly, to wildland fires. As previously discussed, the majority of the GKR Project alignment is located within the CAL FIRE moderate fire hazard severity zone. Portions of the GKR Project are also located within identified CAL FIRE high fire hazard severity zones, and areas that are undesignated. The eastern portion of Segment 4 and the entirety of Segment 5 are located in CPUC-designated Fire Threat Area Tier 3 – Extreme areas. The northern portion of Segment 1, the southern portion of Segment 2, the entirety of Segment 3, and the central portion of Segment 4 are located in CPUC-designated Fire Threat Area Tier 2 – Elevated areas No other portion of the GKR Project is located in a CPUC-designated Fire Threat Area.

High heat or sparks from vehicles or equipment have the potential to ignite dry vegetation and cause fires. However, GKR Project activities would generally be located within existing SCE owned and/or to-be-acquired ROWs where vegetation would be cleared or trimmed. Vehicles and equipment would primarily use existing roads, and would also use an overland travel method in temporary construction areas where and when such a method can be used safely. In addition, SCE would implement standard fire prevention protocols during construction activities and comply with applicable laws and regulations. In addition, SCE would develop and implement a Fire Prevention and Emergency Response Plan per APM HAZ-3.

In the event that the National Weather Service issues a Red Flag Warning during construction of the GKR Project, additional measures would be implemented to address smoking and fire rules, storage and parking areas, the use of gasoline-powered tools, the use of spark arresters on construction equipment, road closures, the use of a fire guard, fire suppression tools, fire suppression equipment, and training requirements. Construction areas would be grubbed/trimmed of vegetation and graded before the staging of equipment, and in such areas where overland travel may occur, dry vegetation would also be trimmed; such activities would minimize the potential for vehicles or equipment to start a fire.

Within California, SCE participates with CAL FIRE, the California Governor's OES, and various city and county fire agencies in the Red Flag Fire Prevention Program, and complies with California PRC Sections 4292 and 4293 related to vegetation management in subtransmission line corridors. The portions of the GKR Project located within moderate or high fire hazard severity zones and within CPUC-designated Tier 3 – Extreme and Tier 2 – Elevated areas would generally be cleared of vegetation and graded prior to the staging of equipment, minimizing the risk of construction vehicles starting a fire.

*5.20.4.1.3.2 Operations*

**No Impact.** No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project. As presented in Chapter 3, the GKR Project entails removing existing, aged electrical infrastructure and replacing that infrastructure, in the same alignment and generally in the same locations, with modern electrical infrastructure. SCE is currently performing O&M

activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project alignment. As currently performed, SCE would continue to implement its standard fire prevention protocols during O&M activities, comply with applicable laws and regulations, implement additional measures in the event of a Red Flag Warning during construction, and participate with CAL FIRE and other city and county fire agencies in the Red Flag Fire Prevention Program (in compliance with PRC Section 4292 and 4293 relating to vegetation management in subtransmission line corridors).

Among the O&M activities that would continue after construction of the GKR Project would be on-going implementation of SCE's 2019 Wildfire Mitigation Plan in areas designated by the CPUC as Fire Threat Area Tier 3 – Extreme or Tier 2 – Elevated. The Plan describes strategies, programs and activities that are in place, being implemented or are under development by SCE to proactively address and mitigate the threat of electrical infrastructure-associated ignitions that could lead to wildfires. Therefore, no impacts would be realized under this criterion during operations and maintenance.

#### 5.20.4.1.4 Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

*5.20.4.1.4.1 Construction*

**Less than Significant Impact.** As discussed in the Hydrology and Water Quality impact analyses in Section 5.10.4, the GKR Project SWPPPs would include measures to control storm water runoff rates which would minimize the potential for significant alteration of drainage patterns that could result in downslope or downstream flooding. Further, rehabilitation of existing access roads and spur roads would include design considerations to maintain or improve drainage patterns within the GKR Project alignment. Therefore, through drainage design and SWPPP implementation, the GKR Project would not substantially alter the existing drainage pattern of the site or area, or increase the rate or amount of surface runoff in a manner which would result in downstream or downslope flooding.

As discussed in the Geology and Soils impact analyses in Section 5.7.4 and displayed in Figureset 5.7-5, the northern portion of Segment 1, the southern portion of Segment 2, most of Segment 3, and the western portion of Segment 4 are located in areas of relatively steep slopes with localized landslide hazards. These localized areas may be susceptible to post-fire slope instability. However, these areas are unpopulated. The remaining portions of the GKR Project alignment are located in valley areas that would not be susceptible to post-fire slope instability. Therefore, impacts from post-fire slope instability would be less than significant.

*5.20.4.1.4.2 Operations*

**No Impacts.** As presented in Chapter 3, SCE is currently performing O&M activities, including inspections, along the subtransmission lines that would be rebuilt under the GKR Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the GKR Project, and therefore no impacts would be realized under this criterion during operations and maintenance.

### *5.20.4.2 Fire Behavior Modeling*

The GKR Project does not include any new electrical lines; therefore, no fire behavior modeling has been performed.

#### *5.20.4.3 Wildfire Management*

During operation and maintenance of the subtransmission lines included in the GKR Project, SCE would implement its Wildfire Mitigation Plan (and successor plans, see Appendix I) to manage wildfire risk in the area. SCE's Wildfire Mitigation Plan is available on the CPUC's Utility Wildfire Mitigation Plans website at https://www.cpuc.ca.gov/SB901/

### 5.20.5 CPUC Draft Environmental Measures

SCE will implement the following CPUC-identified Draft Environmental Measure during construction of the GKR Project:

#### Construction Fire Prevention Plan

A project-specific Construction Fire Prevention Plan for both construction and operation of the project shall be submitted for review prior to initiation of construction. A draft copy of the Plan shall be provided to the CPUC and state and local fire agencies at least 90 days before the start of any construction activities in areas designated as Very High or High Fire Hazard Severity Zones. Plan reviewers shall also include federal, state, or local agencies with jurisdiction over areas where the project is located. The final Plan shall be approved by the CPUC at least 30 days prior to the initiation of construction activities. The Plan shall be fully implemented throughout the construction period and include the following at a minimum:

- The purpose and applicability of the Plan
- Responsibilities and duties
- Preparedness training and drills
- Procedures for fire reporting, response, and prevention that include:
- Identification of daily site-specific risk conditions
- The tools and equipment needed on vehicles and to be on hand at sites
- Reiteration of fire prevention and safety considerations during tailboard meetings
- Daily monitoring of the red-flag warning system with appropriate restrictions on types and levels of permissible activity
- Coordination procedures with federal and local fire officials
- Crew training, including fire safety practices and restrictions
- Method(s) for verifying that all Plan protocols and requirements are being followed

A project Fire Marshal or similar qualified position shall be established to enforce all provisions of the Construction Fire Prevention Plan as well as perform other duties related to fire detection, prevention, and suppression for the project. Construction activities shall be monitored to ensure implementation and effectiveness of the Plan.

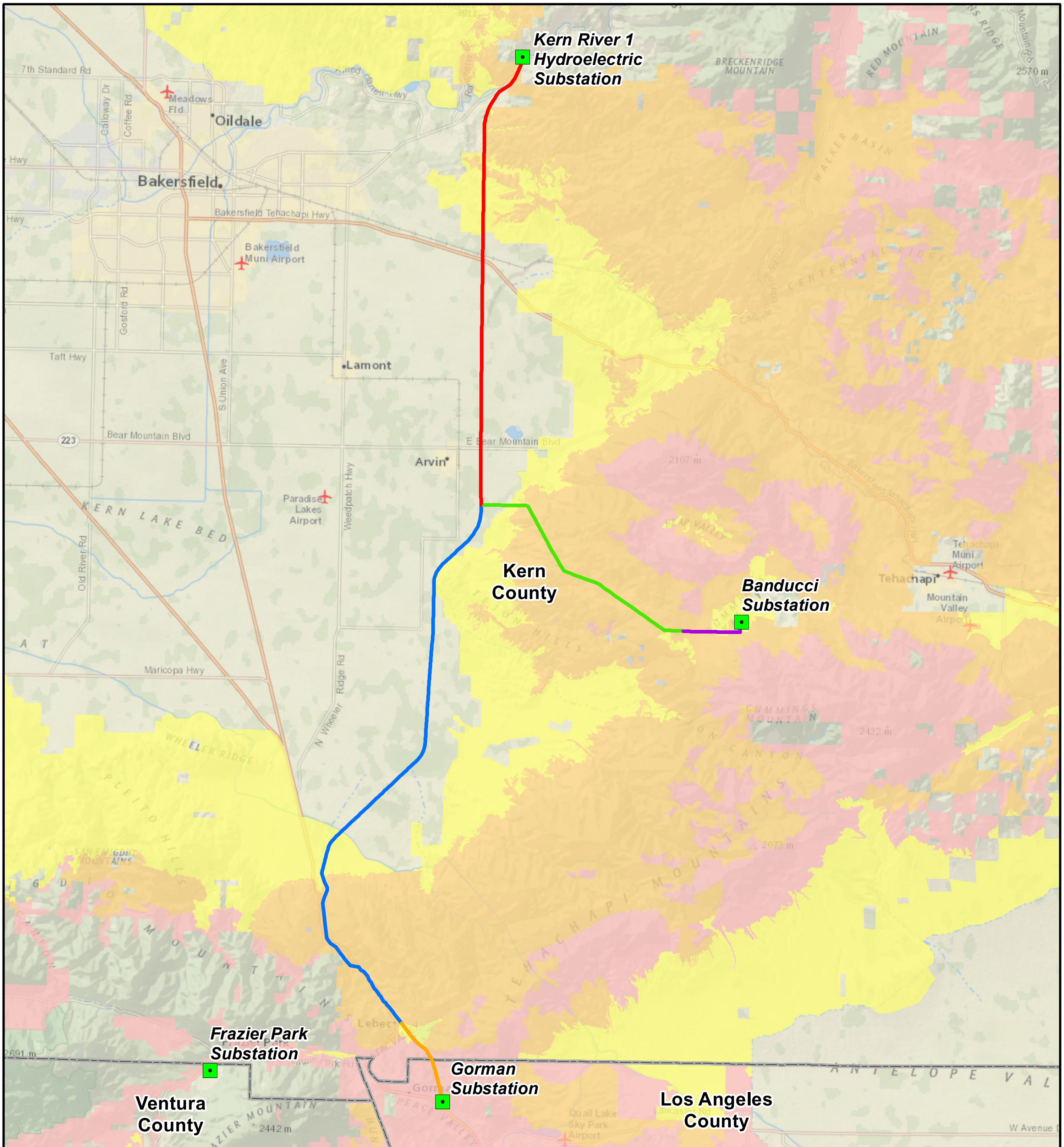
### Fire Prevention Practices (Construction and Maintenance)

The Applicant shall implement ongoing fire patrols during the fire season as defined each year by local, state, and federal fire agencies. These dates vary from year to year, generally occurring from late spring through dry winter periods. During Red Flag Warning events, as issued daily by the National Weather Service, all construction/maintenance activities shall cease, with an exception for transmission line testing, repairs, unfinished work, or other specific activities which may be allowed if the facility/equipment poses a greater fire risk if left in its current state.

All construction/maintenance crews and inspectors shall be provided with radio and cellular telephone access that is operational in all work areas and access routes to allow for immediate reporting of fires. Communication pathways and equipment shall be tested and confirmed operational each day prior to initiating construction/maintenance activities at each work site. All fires shall be reported to the fire agencies with jurisdiction in the area immediately upon discovery of the ignition.

All construction/maintenance personnel shall be trained in fire-safe actions, initial attack firefighting, and fire reporting. All construction/maintenance personnel shall be trained and equipped to extinguish small fires in order to prevent them from growing into more serious threats. All construction/maintenance personnel shall carry at all times a laminated card and be provided a hard hat sticker that list pertinent telephone numbers for reporting fires and defining immediate steps to take if a fire starts. Information on laminated contact cards and hard hat stickers shall be updated and redistributed to all construction/maintenance personnel and outdated cards and hard hat stickers shall be destroyed prior to the initiation of construction/maintenance activities on the day the information change goes into effect.

Construction/maintenance personnel shall have fire suppression equipment on all construction vehicles. Construction/maintenance personnel shall be required to park vehicles away from dry vegetation. Water tanks and/or water trucks shall be sited or available at active project sites for fire protection during construction. The Applicant shall coordinate with applicable local fire departments prior to construction/maintenance activities to determine the appropriate amounts of fire equipment to be carried on vehicles and, should a fire occur, to coordinate fire suppression activities.




## Legend

- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Substation
- Counties

**Calfire Fire Hazard Severity Zones**

- Very High
- High
- Moderate

N

0 10
Miles

Note:
Source: CALFIRE Fire Hazard Severity Zones.

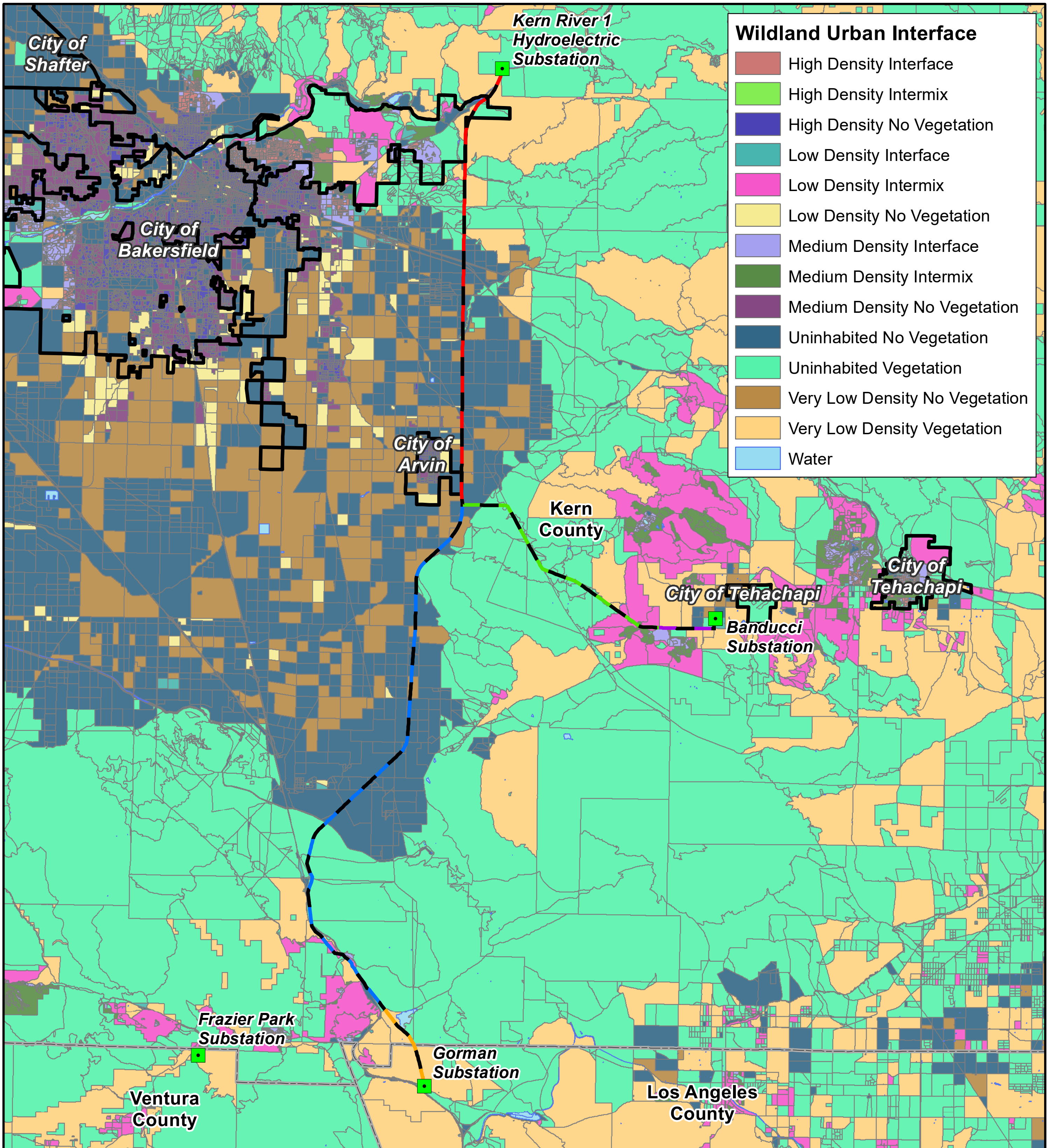
# GORMAN-KERN RIVER 66 kV PROJECT

## FIRE HAZARD SEVERITY ZONES

ARCADIS
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE 5.20-1

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-20-1_FireHazardSeverityZones_KERN.mxd 06/16/2021




**Legend**

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Counties
- City Boundary

N

0 10
Miles

Note:
(1) Wildland Urban Interface source: USDA Forest Service
*https://www.fs.usda.gov/rds/archive/Product/RDS-2015-0012-2*

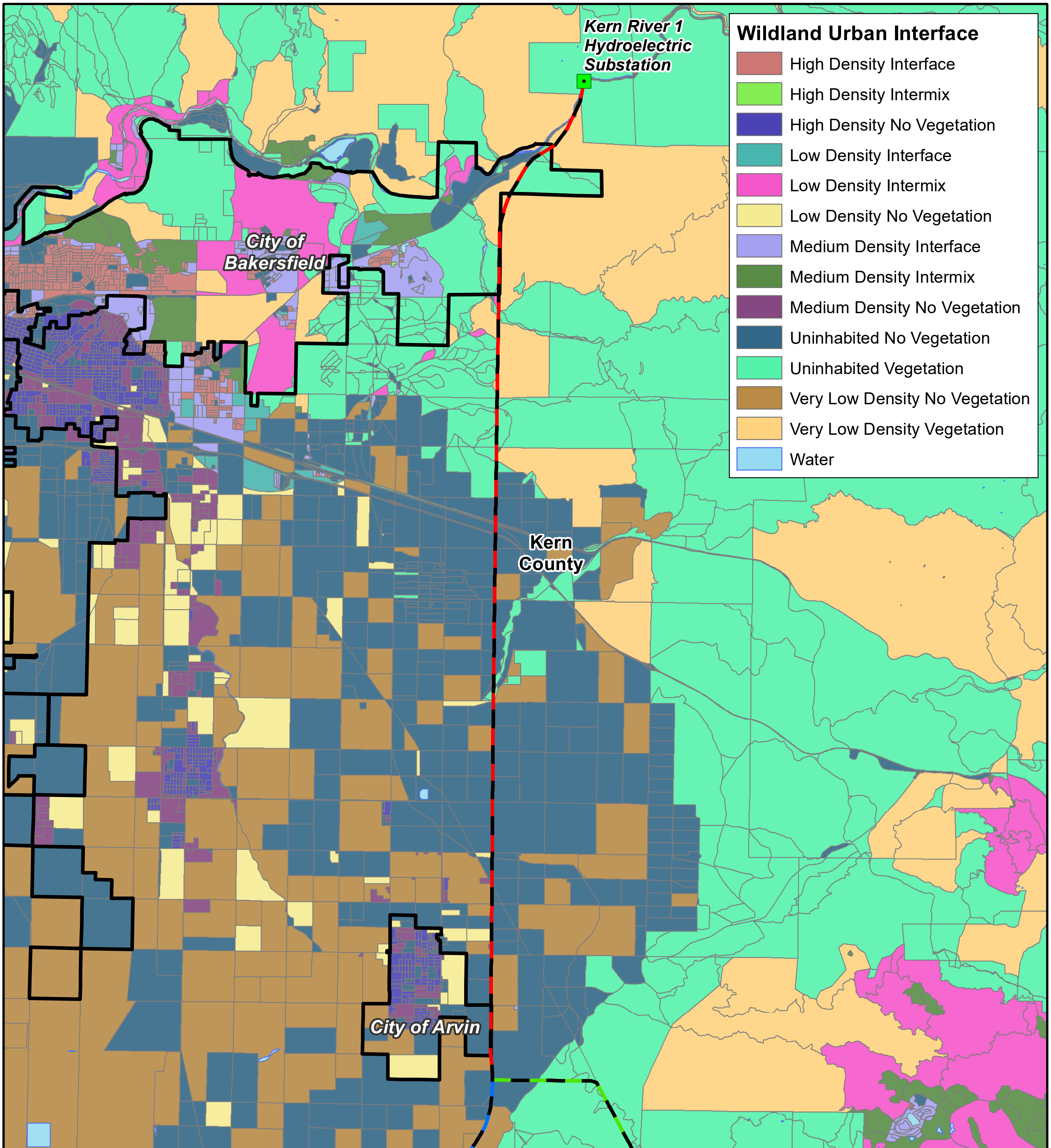
**GORMAN-KERN RIVER 66 kV PROJECT**

**WILDLAND URBAN INTERFACE**

ARCADIS
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

FIGURESET
**5.20-2.a**

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-20-2_WildlandUrbanInterface_KERN.mxd 06/18/2021




**Legend**

- Substation
- Segment 1
- Segment 2
- Segment 4
- Counties
- City Boundary

N

0 4
Miles

Note:
(1) Wildland Urban Interface source: USDA Forest Service
*https://www.fs.usda.gov/rds/archive/Product/RDS-2015-0012-2*

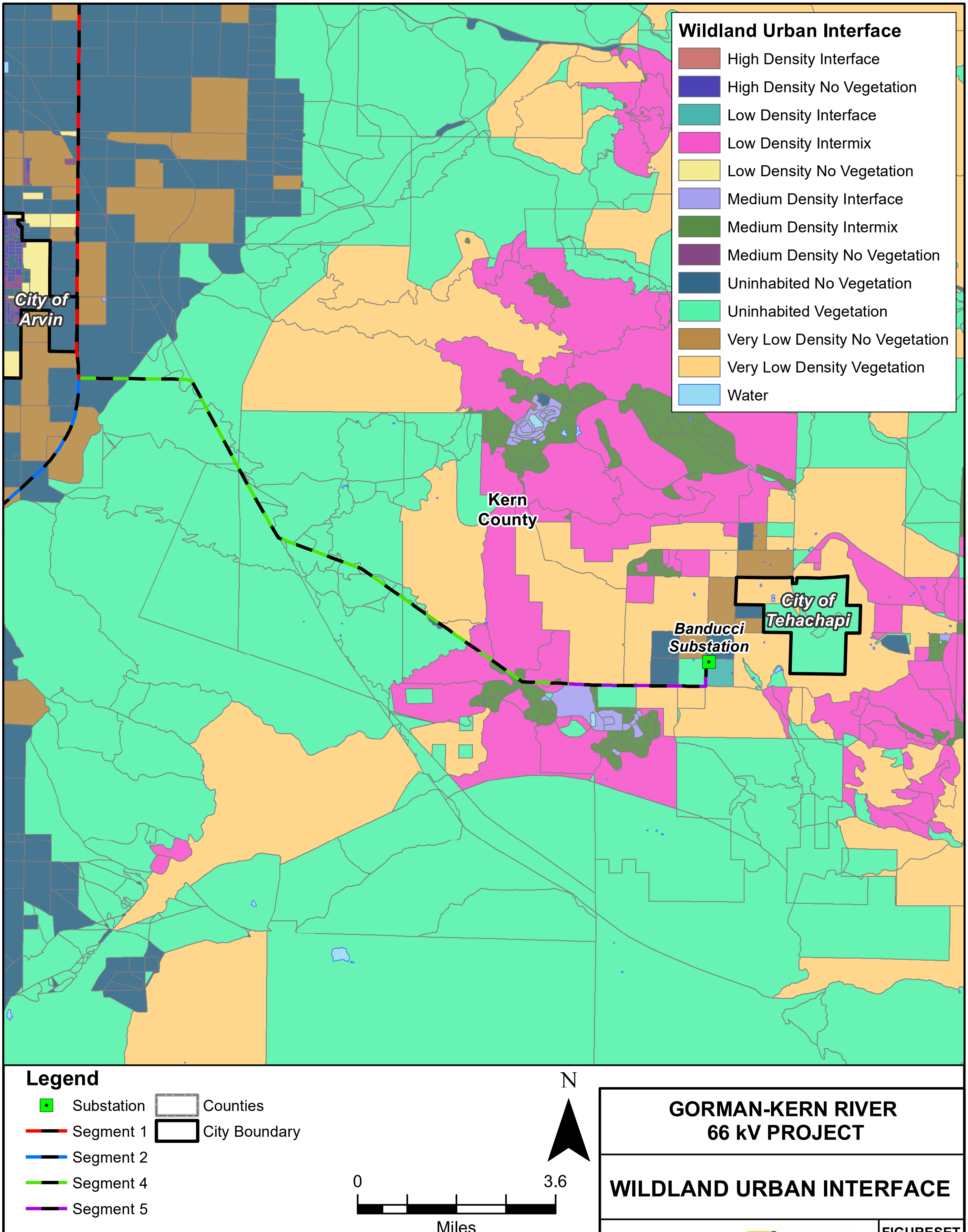
**GORMAN-KERN RIVER 66 kV PROJECT**

**WILDLAND URBAN INTERFACE**

ARCADIS SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company

FIGURESET
**5.20-2.b**

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-20-2_WildlandUrbanInterface_KERN.mxd 06/18/2021




Note:
(1) Wildland Urban Interface source: USDA Forest Service
*https://www.fs.usda.gov/rds/archive/Product/RDS-2015-0012-2*

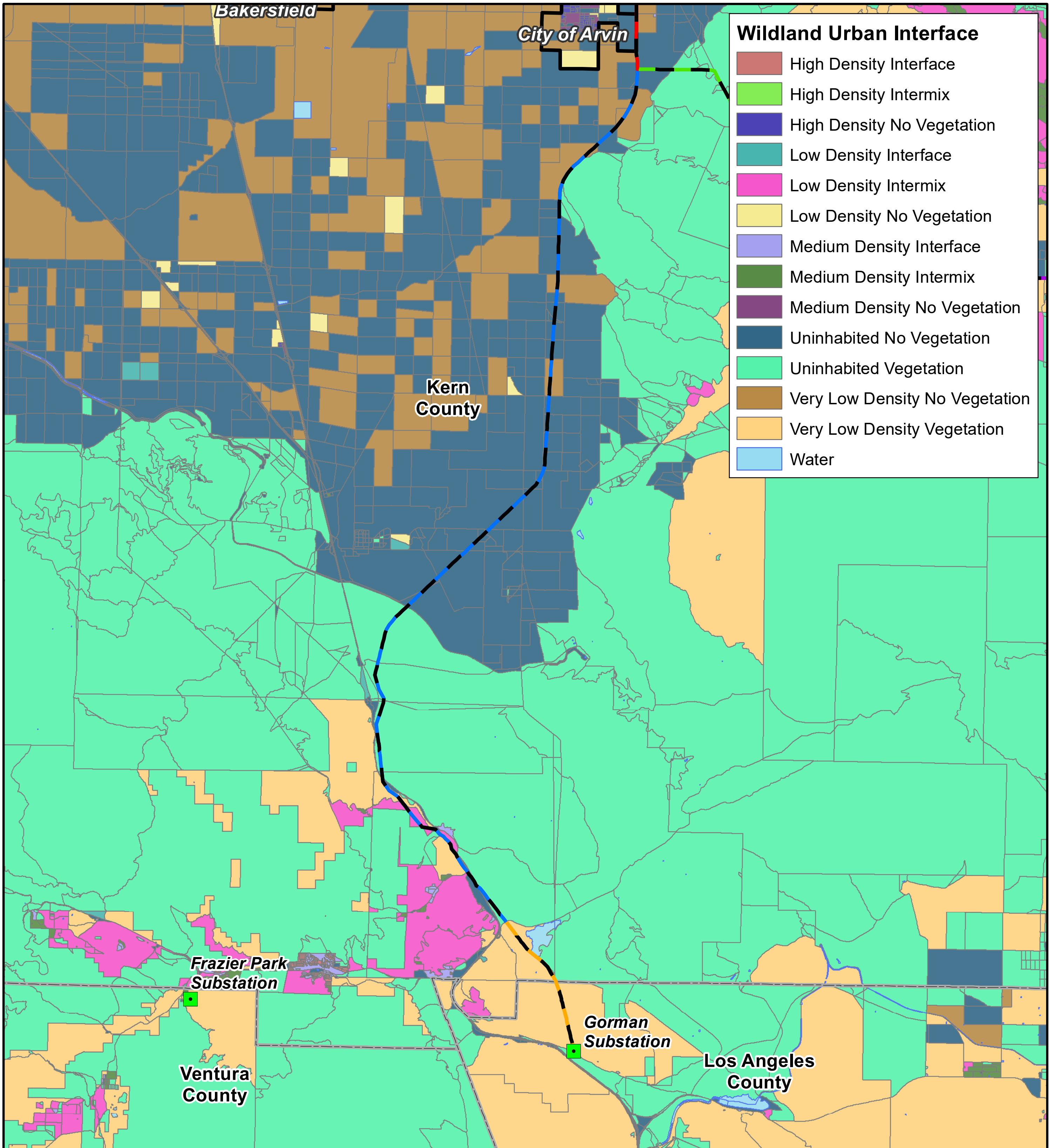
**GORMAN-KERN RIVER 66 kV PROJECT**

**WILDLAND URBAN INTERFACE**

ARCADIS | SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company

FIGURESET **5.20-2.c**

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-20-2_WildlandUrbanInterface_KERN.mxd 06/18/2021




**Legend**

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Counties
- City Boundary

N

0 6

Miles

Note:
(1) Wildland Urban Interface source: USDA Forest Service
*https://www.fs.usda.gov/rds/archive/Product/RDS-2015-0012-2*

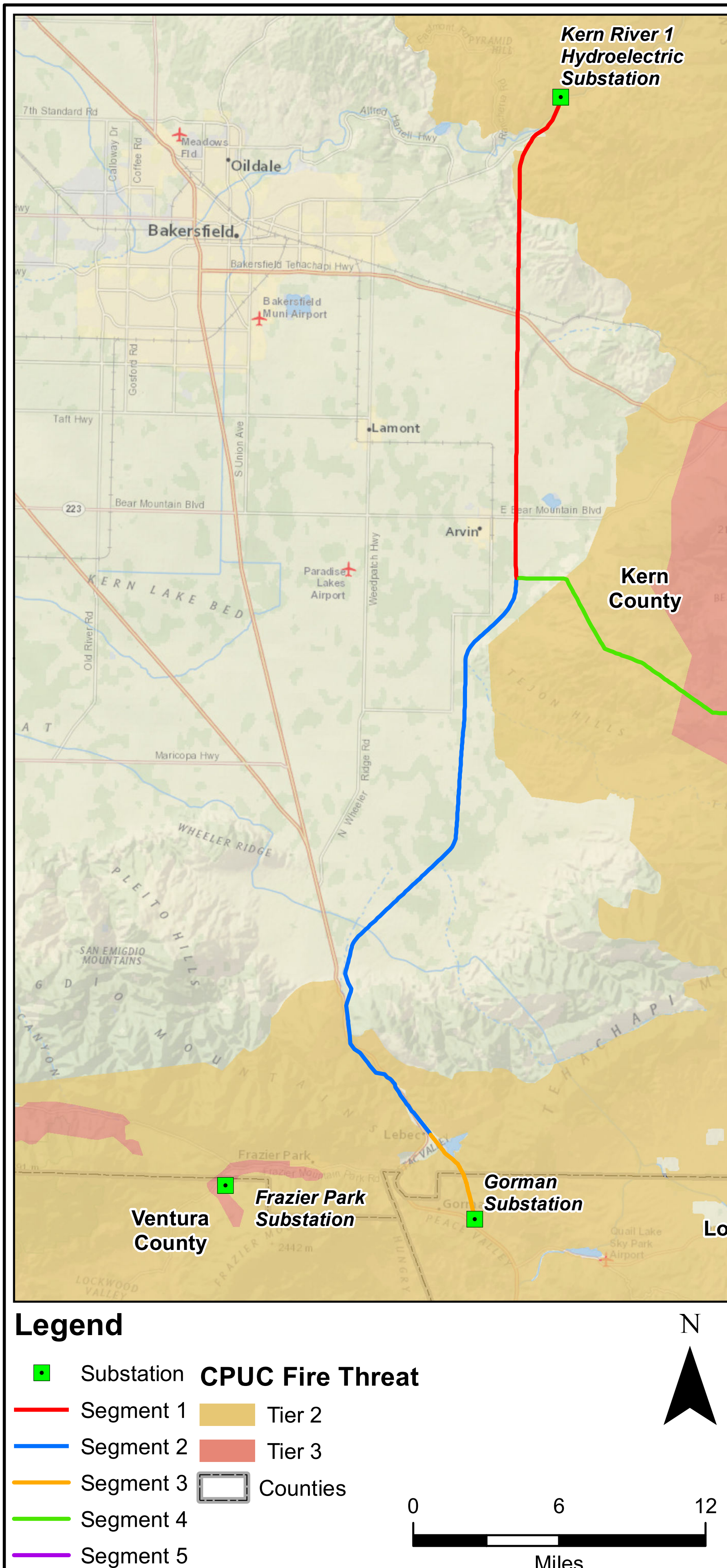
**GORMAN-KERN RIVER 66 kV PROJECT**

**WILDLAND URBAN INTERFACE**

ARCADIS SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company

FIGURESET **5.20-2.d**

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-20-2_WildlandUrbanInterface_KERN.mxd 06/18/2021




# GORMAN-KERN RIVER 66 kV PROJECT

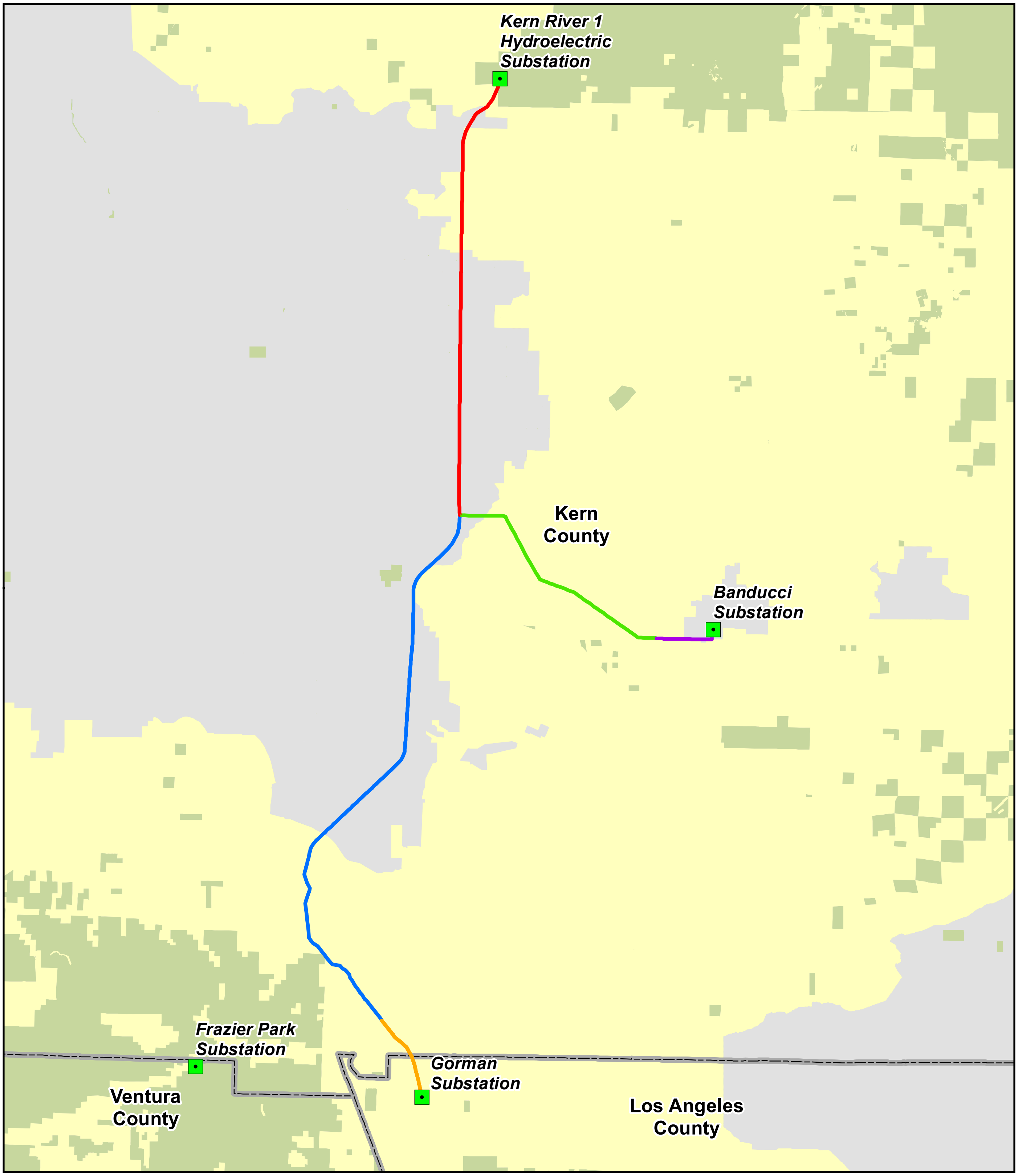
## CPUC FIRE THREAT

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE
5.20-3

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-20-3_CPUC_Fire_Threat.mxd 06/16/2021




## Legend

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Counties
- Local Responsibility Areas (LRA)
- State Responsibility Areas (SRA)
- Federal Responsibility Areas (FRA)

N

0 6 12
Miles

# GORMAN-KERN RIVER 66 kV PROJECT

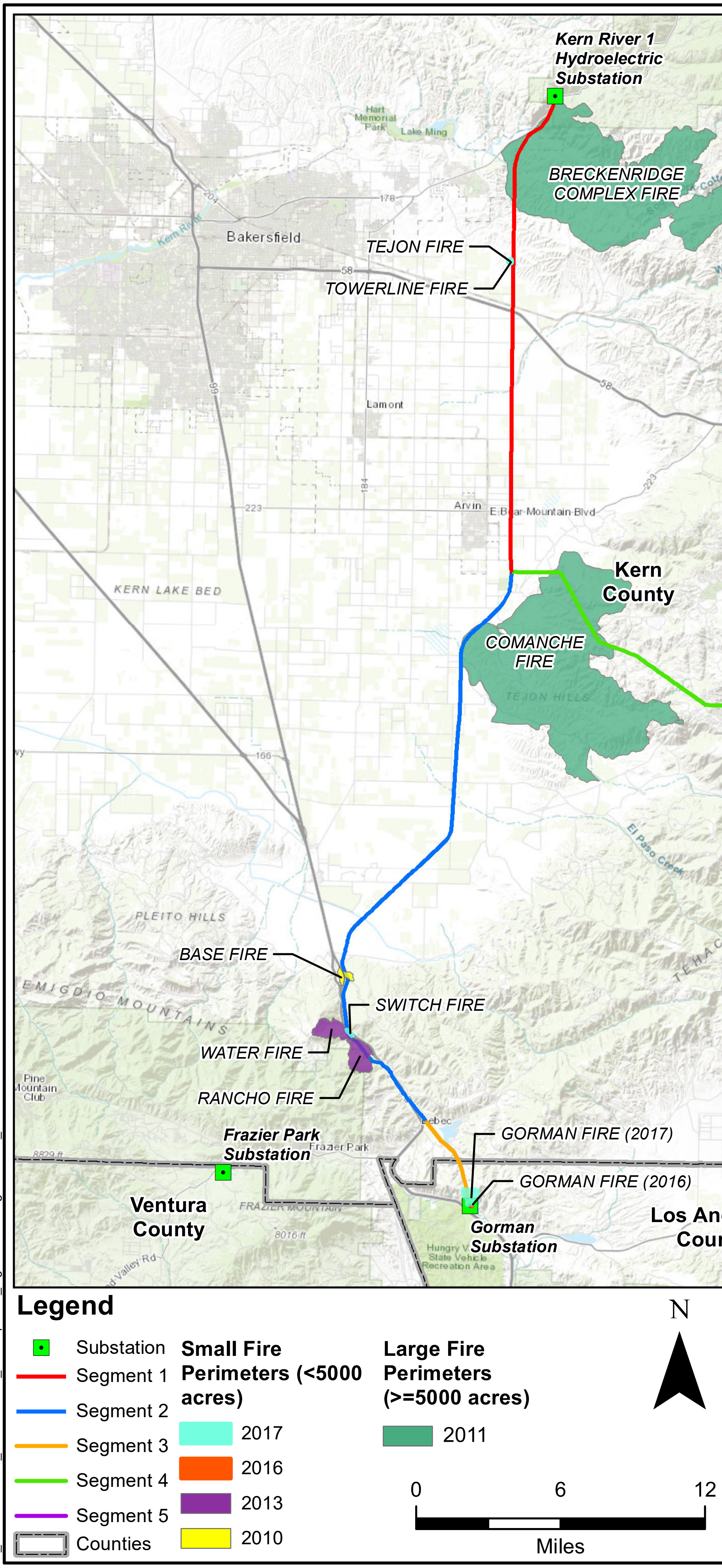
# RESPONSIBILITY AREAS

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE 5.20-4

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-20-4_ResponsibilityAreas.mxd 06/16/2021




**GORMAN-KERN RIVER 66 kV PROJECT**

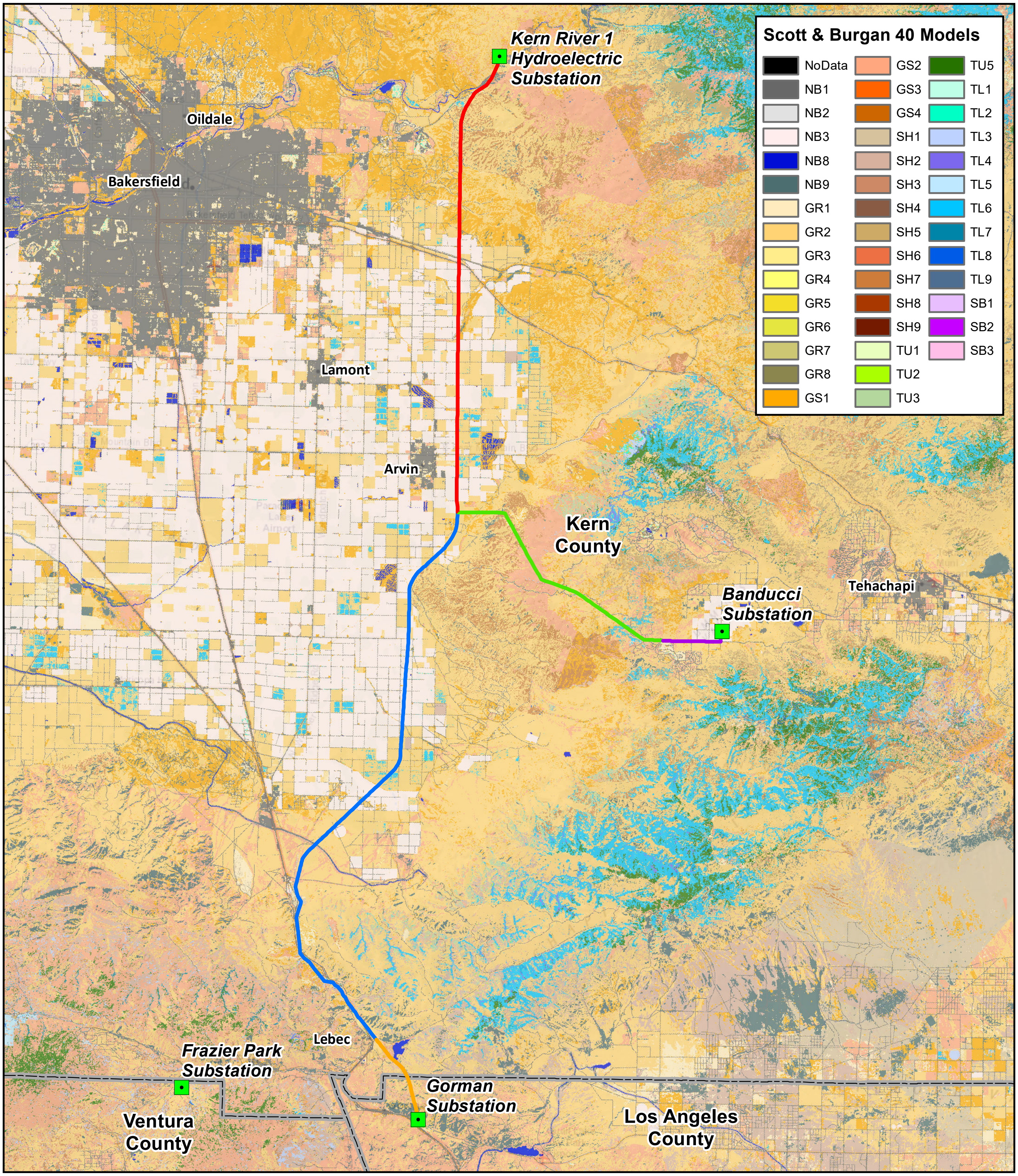
**FIRE OCCURRENCE**

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE
**5.20-5**

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-20-5_Fire Occurrence.mxd 6/18/2021




## Legend

- Substation
- Counties
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5

N

0 6 12

Miles

**GORMAN-KERN RIVER 66 kV PROJECT**

**SCOTT AND BURGAN FIRE BEHAVIOR FUEL MODELING**

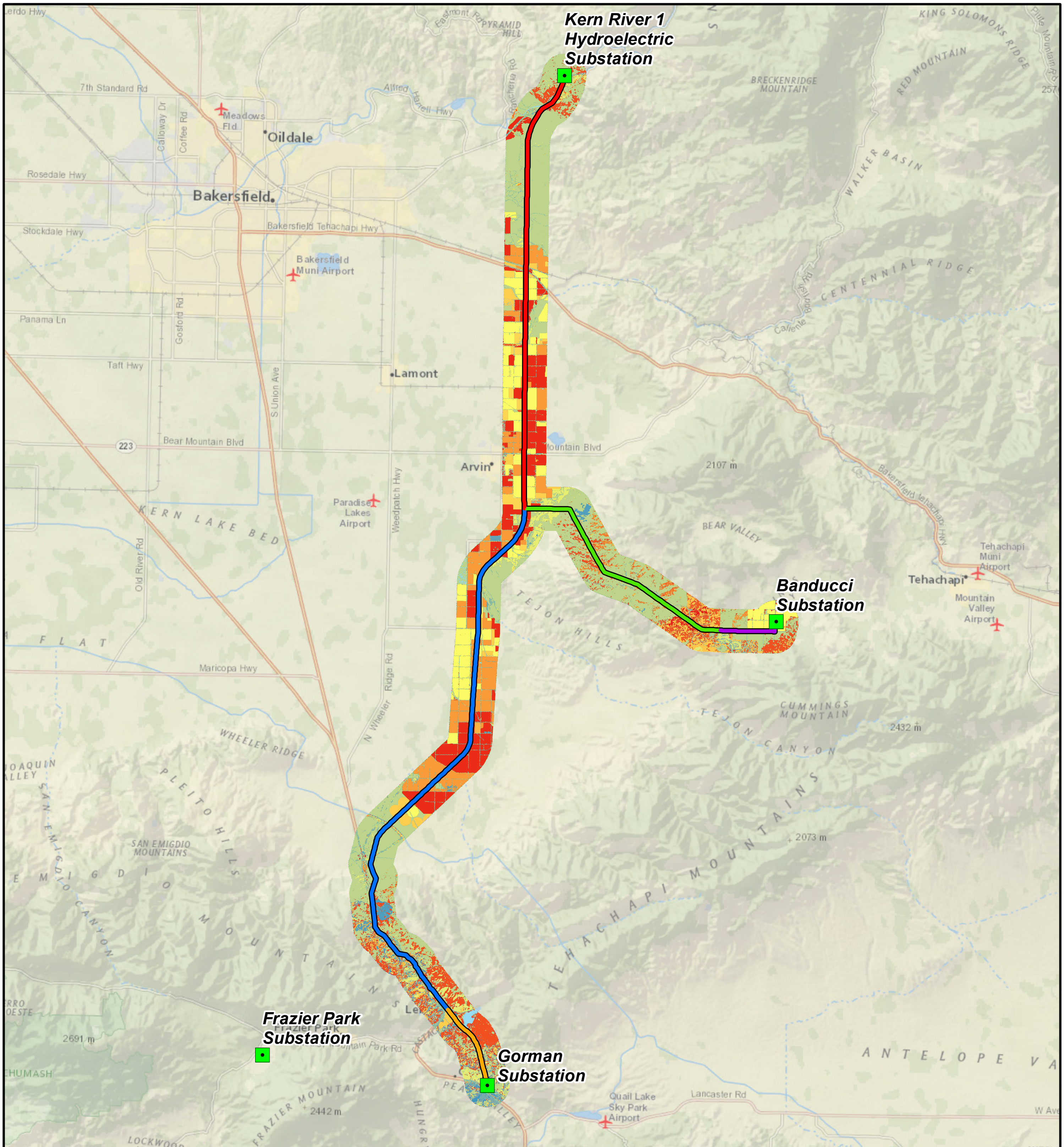
ARCADIS

SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

FIGURE 5.20-6

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-20-6_ScottandBurganFireBehaviorFuelModeling.mxd 06/16/2021




## Legend

Note: See additional legend on last page of figureset.

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5

N

0 10
Miles

NOTES:
(1) Sources: LANDFIRE's (LF) Existing Vegetation Type (EVT)https://landfire.gov/evt.php

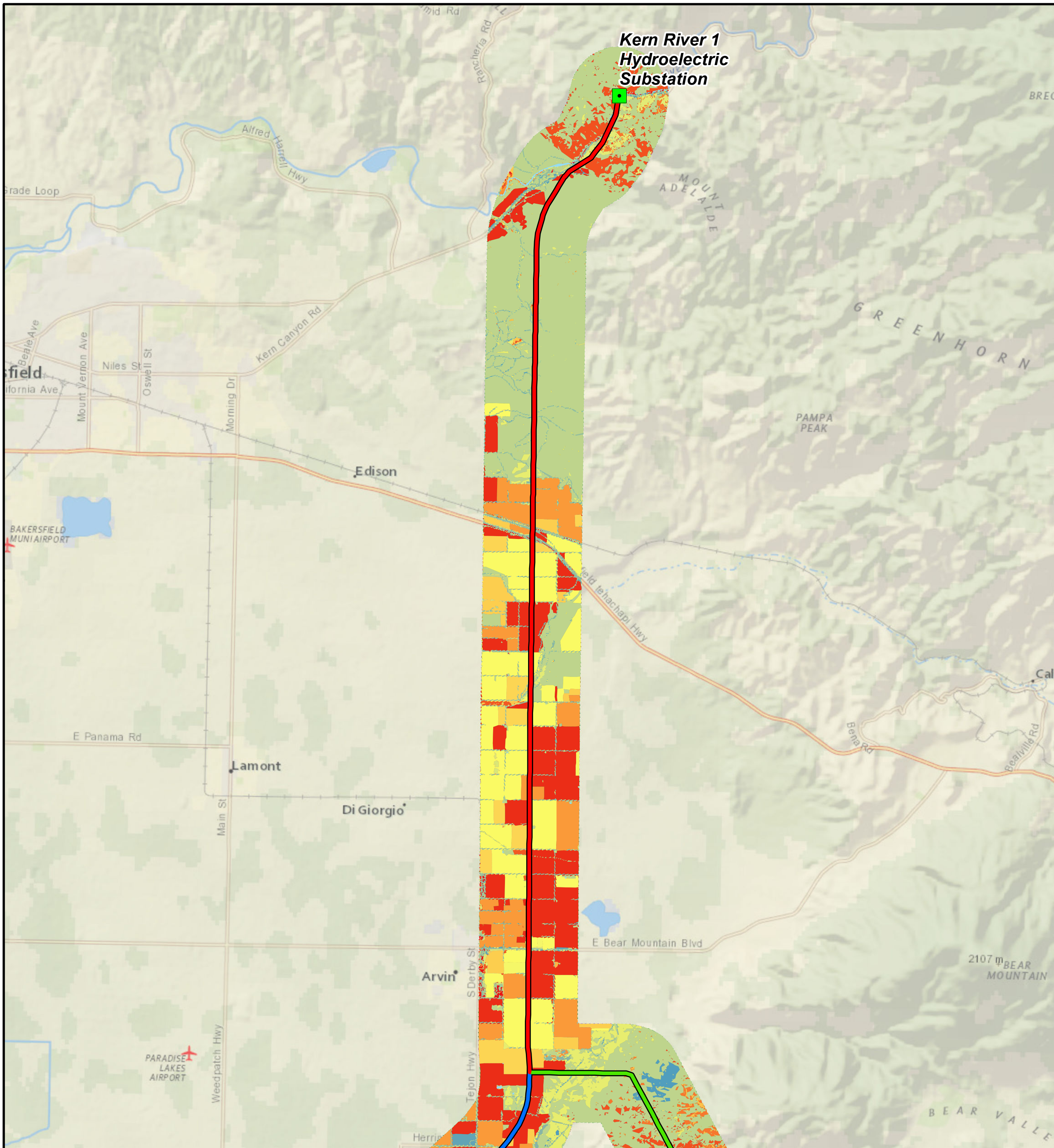
# GORMAN-KERN RIVER 66 kV PROJECT

## USDA FIRE EFFECTS INFORMATION SYSTEM VEGETATION TYPES

ARCADIS
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURESET
5.20-7

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-20-7_Landfire.mxd 11/2/2021




## Legend

Note: See additional legend on last page of figureset.

- Substation
- Segment 1
- Segment 2
- Segment 4

N

0 4
Miles

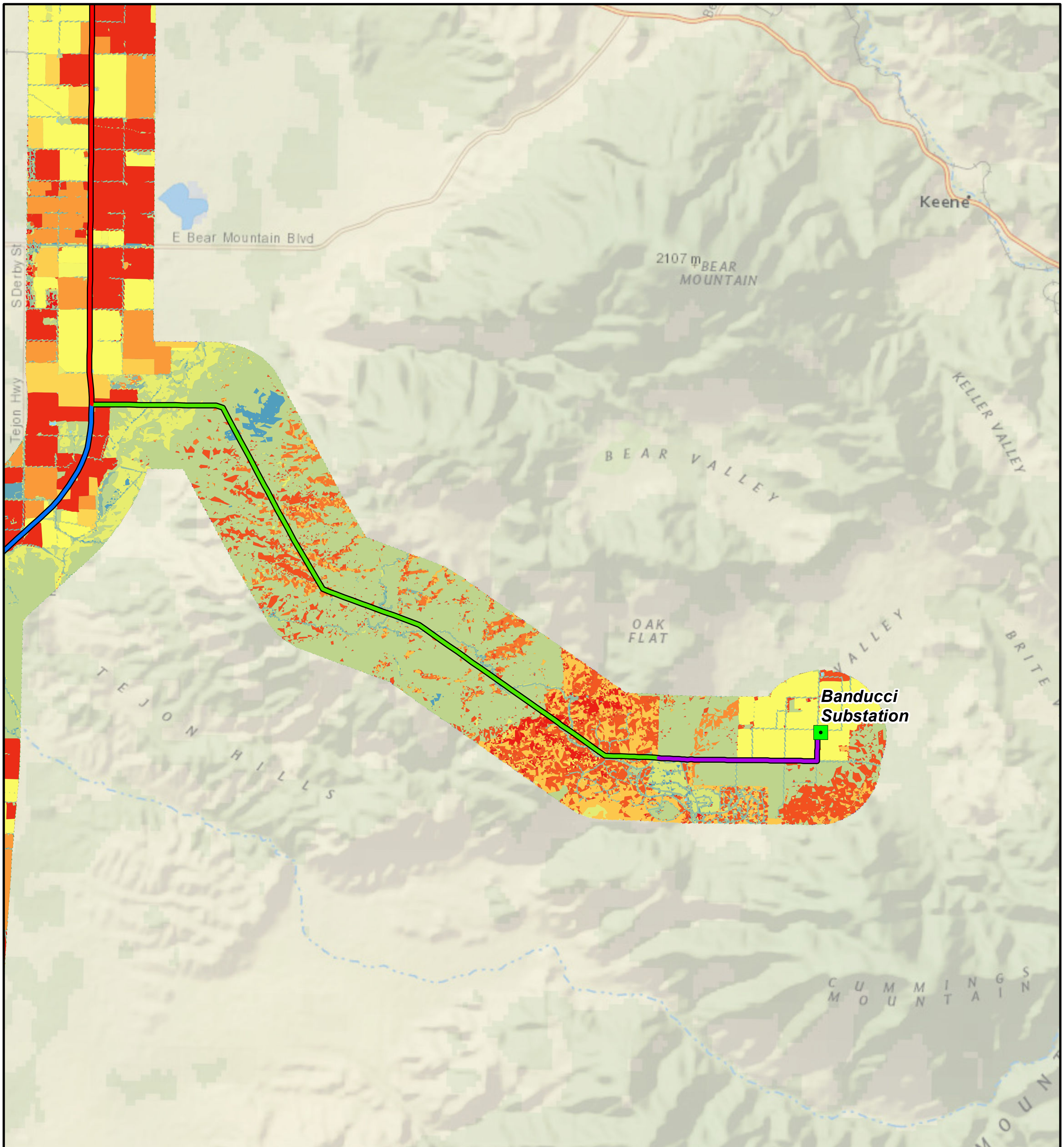
# GORMAN-KERN RIVER 66 kV PROJECT

## USDA FIRE EFFECTS INFORMATION SYSTEM VEGETATION TYPES

FIGURESET
5.20-7

NOTES:
(1) Sources: LANDFIRE's (LF) Existing Vegetation Type (EVT)https://landfire.gov/evt.php

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-20-7_Landfire.mxd 11/2/2021




**Legend** Note: See additional legend on last page of figureset.

- Substation
- Segment 1
- Segment 2
- Segment 4
- Segment 5

N

0 3.6
Miles

NOTES:
(1) Sources: LANDFIRE's (LF) Existing Vegetation Type (EVT)https://landfire.gov/evt.php

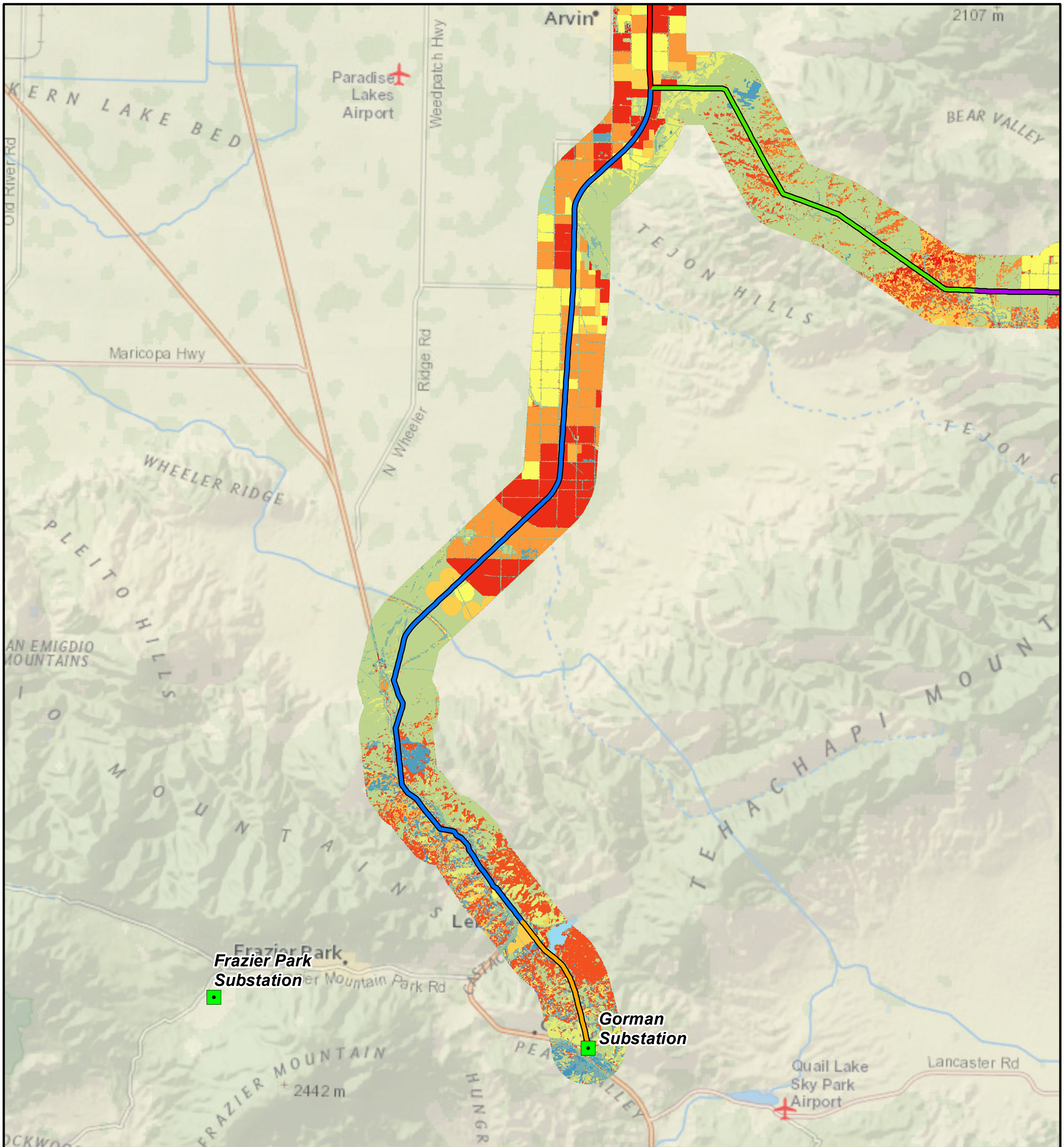
# GORMAN-KERN RIVER 66 kV PROJECT

## USDA FIRE EFFECTS INFORMATION SYSTEM VEGETATION TYPES

ARCADIS | SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL® Company

FIGURESET 5.20-7

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-20-7_Landfire.mxd 11/2/2021




**Legend** Note: See additional legend on last page of figureset.

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5

N

0 6
Miles

NOTES:
(1) Sources: LANDFIRE's (LF) Existing Vegetation Type (EVT)https://landfire.gov/evt.php

# GORMAN-KERN RIVER 66 kV PROJECT

## USDA FIRE EFFECTS INFORMATION SYSTEM VEGETATION TYPES

ARCADIS
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURESET
5.20-7

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-20-7_Landfire.mxd 11/2/2021

**Landfire Existing Vegetation Fuel Name**

- Ba Open Water
- Bau Developed-High Intensity
- Bau Developed-Low Intensity
- Bau Developed-Medium Intensity
- Bau Developed-Roads
- Da Close Grown Crop
- Da Row Crop
- Da Vineyard
- Da Wheat
- Dab Bush Fruit and Berries
- Dab Fallow/Idle Cropland
- Dab Orchard
- Dab Pasture and Hayland
- Dgr Developed Ruderal Grassland
- Dgr Developed Ruderal Herbaceous Wetland
- Dgr Urban Herbaceous
- Dsh Developed Ruderal Shrub Wetland
- Dsh Developed Ruderal Shrubland
- Dsh Urban Shrubland
- Dtc Developed Ruderal Evergreen Forest
- Dtc Urban Evergreen Forest
- Dtd Developed Ruderal Deciduous Forest
- Dtd Urban Deciduous Forest
- Dtm Developed Ruderal Deciduous-Evergreen Forest
- Dtm Urban Mixed Deciduous-Evergreen Forest
- He California Central Valley and Southern Coastal Grassland
- He California Mesic Serpentine Grassland
- He Recently Burned-Herb and Grass Cover
- He Recently Logged-Herb and Grass Cover
- He Temperate Pacific Freshwater Emergent Marsh
- He Temperate Pacific Subalpine-Montane Wet Meadow
- Sh California Mesic Chaparral
- Sh California Ruderal Grassland Meadow & Scrub
- Sh Northern and Central California Dry-Mesic Chaparral
- Sh Recently Burned-Shrub Cover
- Sh Recently Logged-Shrub Cover
- Sh Sonora-Mojave Mixed Salt Desert Scrub
- Sh Sonora-Mojave Semi-Desert Chaparral
- Sh Southern California Coastal Scrub
- Sh Southern California Dry-Mesic Chaparral
- Sh Western North American Ruderal Wet Shrubland Meadow & Marsh
- Sps Mediterranean California Sparsely Vegetated Systems
- Tr California Central Valley Mixed Oak Savanna
- Tr California Central Valley Riparian Woodland and Shrubland
- Tr California Lower Montane Blue Oak Forest and Woodland
- Tr California Lower Montane Blue Oak-Foothill Pine Forest and Woodland
- Tr California Lower Montane Foothill Pine Woodland and Savanna
- Tr California Montane Jeffrey Pine(-Ponderosa Pine) Woodland
- Tr California Montane Riparian Systems
- Tr Californian Ruderal Forest
- Tr Central and Southern California Mixed Evergreen Woodland
- Tr Great Basin Pinyon-Juniper Woodland
- Tr Mediterranean California Dry-Mesic Mixed Conifer Forest and Woodland
- Tr Mediterranean California Lower Montane Black Oak - Conifer Forest and Woodland
- Tr Mediterranean California Lower Montane Conifer Forest and Woodland
- Tr Mediterranean California Mixed Oak Woodland
- Tr Recently Burned-Tree Cover
- Tr Recently Logged-Tree Cover
- Tr Southern California Oak Woodland and Savanna

NOTES:
(1) Sources: LANDFIRE's (LF) Existing Vegetation Type (EVT)https://landfire.gov/evt.php

**GORMAN-KERN RIVER 66 kV PROJECT**

**USDA FIRE EFFECTS INFORMATION SYSTEM VEGETATION TYPES**

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

FIGURESET
5.20-7

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure5-20-7_LandfireLegend.mxd 11/4/2021

## 5.21 Mandatory Findings of Significance

This Section of the PEA provides an analysis of the mandatory findings of significance associated with construction of the GKR Project. In accordance with the CEQA Guidelines Section 15064 (a through h), this PEA section provides substantial evidence that is used to support the determination of whether the GKR Project will result in significant environmental impacts.

### 5.21.1 Impact Assessment for Mandatory Findings of Significance

#### *5.21.1.1 Significance Criteria*

Appendix G of the CEQA Guidelines provides the criteria used in determining whether project related impacts will be significant. Impacts resulting from the GKR Project could be considered significant if they have the potential to create substantial impacts when the following questions are considered. Would the GKR Project:

- Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?
- Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?
- Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

#### *5.21.1.2 Impact Analysis*

##### 5.21.1.2.1 Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

**Less than Significant with Mitigation.** The GKR Project would not degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major period of California history or prehistory.

The GKR Project would involve short-term construction activities, consisting of replacing existing structures with replacement structures located proximate to the existing structures. With the implementation of APMs and compliance with applicable regulations designed to protect the environment, construction would not substantially degrade the quality of the environment. The GKR Project would result in less than significant impacts to existing habitats, wetlands, and waterways. Therefore, the GKR Project would not substantially reduce the habitat of a fish or wildlife species.

The GKR Project would not have substantial impacts on wildlife habitat or designated or proposed critical habitat and would have no impacts on wildlife refuges. It would not require substantial clearing of vegetation. Any placement of fill in waterways would comply with federal and state wetlands and waterways regulations, and no discharges of domestic or industrial effluent would occur that could threaten the survival of a species. The GKR Project's impacts on biological resources would be less than significant with incorporation of APMs. Therefore, the GKR Project would not cause a fish or wildlife population to drop below self-sustaining level or threaten to eliminate a plant or animal community.

The GKR Project would have less than significant impacts on special-status plants and animals. It would not involve construction of a highway, levee, or other major infrastructure that could restrict the range of a species. Therefore, the GKR Project would not restrict the range of a rare or endangered plant or animal and any biological impacts would be less than significant.

The GKR Project would not eliminate important examples of the major periods of California history or prehistory. With incorporation of APMs, impacts to cultural resources would be less than significant.

Overall, the GKR Project would not substantially degrade the quality of the environment and all environmental impacts would be reduced to less than significant with the incorporation of APMs. Therefore, less than significant impacts would occur under this criterion.

#### 5.21.1.2.2 Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

**No Impact.** As discussed in Section 7.1, the GKR Project, with the incorporation of APMs, would not result in any cumulatively considerable impacts to any environmental resource category.

#### 5.21.1.2.3 Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

**Less than Significant Impact.** The GKR Project would not result in environmental impacts that would have substantial direct or indirect effects on human beings, including noise, traffic, or potential for hazards from hazardous materials or accidents in close proximity to residential or recreational areas. As presented in Chapter 5, the direct and indirect impacts of the GKR Project's construction would be less than significant for all resource areas. Therefore, the GKR Project would not cause a substantial adverse direct or indirect effect on human beings, and impacts would be less than significant.

# 6 Comparison of Alternatives

This Chapter presents the results of a comparative analysis of the GKR Project and its feasible alternatives in terms of potential environmental impacts.

## 6.1 Alternatives Comparison

### 6.1.1 Comparison of Ability of Each Alternative to Avoid or Reduce a Potentially Significant Impact

As presented in Chapter 5, no potentially significant impacts have been identified. The project presents impacts that would be less than significant with mitigation for the following CEQA impact criteria:

- Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the region is nonattainment under an applicable federal or state ambient air quality standard?
- Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status in local or regional plans, policies, or regulations, or by the CDFW or USFWS?
- Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS?
- Would the project have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means?
- Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?
- Would the project disturb any human remains, including those interred outside of dedicated cemeteries?
- Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
- Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- Would the project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

As presented in Chapter 4, the following alternatives have been identified as feasible and thus carried through to this analysis:

- Alternative A
- Alternative B
- Alternative C

These alternatives are each potentially feasible, meet the underlying purpose of the GKR Project, and meet the basic project objectives.

Because no potentially significant and unavoidable impacts were identified, none of these alternatives would avoid or reduce a potentially significant impact. The relative effect for each of the CEQA impact criteria identified above for each of the feasible alternatives is discussed in the sections below. For all alternatives, and the proposed project, all potentially significant impacts can be mitigated to a less than significant level with implementation of SCE's APMs.

### *6.1.1.1 Cumulatively Considerable Net Increase of Any Criteria Pollutant*

#### 6.1.1.1.1 Alternative A

Compared with the GKR Project, emissions of criteria pollutants under Alternative A would likely be greater in the short-term and the long-term, and the impacts would be less localized and more widespread. This is due to the greater scope of work under Alternative A and the longer distance over which work under Alternative A would be performed.

#### 6.1.1.1.2 Alternative B

Compared with the GKR Project, emissions of criteria pollutants under Alternative B would likely be greater in the short-term due to the increased project scope, greater in the long-term due to the installation of fossil fuel-fired generation at Kern River 1 Hydroelectric Substation, and the impacts would be less localized and more widespread. This is due to the greater scope of construction work under Alternative B and the longer distance over which work under Alternative B would be performed.

#### 6.1.1.1.3 Alternative C

Compared with the GKR Project, emissions of criteria pollutants under Alternative C would likely be greater in the short-term due to the increased project scope, greater in the long-term due to the installation of fossil fuel-fired generation at Kern River 1 Hydroelectric Substation, and the impacts would be less localized and more widespread. This is due to the greater scope of construction work under Alternative C and the longer distance over which work under Alternative C would be performed.

### *6.1.1.2 Species Identified as Candidate, Sensitive, or Special-Status*

#### 6.1.1.2.1 Alternative A

Compared with the GKR Project, potential impacts under Alternative A to candidate, sensitive, or special-status species would likely be greater in the short-term and the long-term, and the impacts would be less localized and more widespread. This is due to the greater distance over which work under Alternative A would be performed, the potential for special status species to be found in those areas where work under Alternative A would be performed but work under the GKR Project would not, and the longer construction timeframe.

#### 6.1.1.2.2 Alternative B

Compared with the GKR Project, potential impacts under Alternative B to candidate, sensitive, or special-status species would be greater in the short-term and the long-term, and the impacts would be less localized and more widespread. This is due to the greater distance over which work under Alternative B would be performed, and the longer construction timeframe.

#### 6.1.1.2.3 Alternative C

Compared with the GKR Project, potential impacts under Alternative C to candidate, sensitive, or special-status species would be greater in the short-term and the long-term, and the impacts would be less localized and more widespread. This is due to the greater distance over which work under Alternative C would be performed, the potential for special status species to be found in those areas where work under Alternative C would be performed but work under the GKR Project would not, and the longer construction timeframe.

### *6.1.1.3 Riparian Habitat or Other Sensitive Natural Communities*

#### 6.1.1.3.1 Alternative A

Compared with the GKR Project, potential impacts under Alternative A to riparian and other sensitive natural communities would be greater in the short-term; this is due to the greater distance along which work would occur under Alternative A and thus the number of riparian communities and other sensitive natural communities that would be intersected by the Alternative alignment. Potential impacts would also be greater in the long-term; this is due to the longer linear length along which O&M-related activities would occur. Compared with the GKR Project, impacts would be more widespread. This is due to the longer linear length of the Alternative.

#### 6.1.1.3.2 Alternative B

Compared with the GKR Project, potential impacts under Alternative B to riparian and other sensitive natural communities would be equivalent in the short-term; this is because some work under this alternative would occur in the same locations where work is planned under the GKR Project, and those locations where work under this alternative would occur that are not coincident with areas where work is planned under the GKR Project do not contain riparian habitat or other sensitive natural communities. Potential impacts would be lessened in the long-term, as the Alternative would require O&M activities in fewer areas with riparian and other sensitive natural communities than under the GKR Project. The impacts would be no more localized or widespread, as the locations where impacts to riparian or sensitive natural communities may occur are coincident with those under the GKR Project.

#### 6.1.1.3.3 Alternative C

Compared with the GKR Project, potential impacts under Alternative C to riparian and other sensitive natural communities would be greater in the short-term; this is due to the routing of Alternative C in sensitive natural communities that do not overlap the alignment of the GKR Project. Potential impacts would also be greater in the long-term. Compared with the GKR Project, impacts would be more widespread. This is due to the longer linear length of the Alternative.

### *6.1.1.4 State or Federally Protected Wetlands*

#### 6.1.1.4.1 Alternative A

Compared with the GKR Project, potential impacts under Alternative A to wetlands would be greater in the short-term; this is due to the greater distance along which work would occur under Alternative A and thus the length and area of wetlands that would be intersected by the Alternative A alignment. Potential impacts would also be greater in the long-term; this is due to the longer linear length along which O&M-related activities would occur. Compared with the GKR Project, impacts would be more widespread. This is due to the longer linear length of Alternative A.

#### 6.1.1.4.2 Alternative B

Compared with the GKR Project, potential impacts under Alternative B to wetlands would be the same in the short-term; this is because work under Alternative B would not occur in any wetlands other than those coincident with wetlands that could be impacted by the GKR Project. Potential impacts would be lesser in the long-term, as the Alternative would require O&M activities in fewer wetlands than under the GKR Project. The impacts would be more widespread during construction and more localized during O&M.

#### 6.1.1.4.3 Alternative C

Compared with the GKR Project, potential impacts under Alternative C to wetlands would be the same in the short-term; this is because work under Alternative C would not occur in any wetlands other than those coincident with wetlands that could be impacted by the GKR Project. Potential impacts would be lesser in the long-term, as the Alternative would require O&M activities in fewer wetlands than under the GKR Project. The impacts would be more widespread during construction and more localized during O&M.

### *6.1.1.5 Archaeological Resources and Human Remains*

#### 6.1.1.5.1 Alternative A

Compared with the GKR Project, Alternative A's potential impacts to archaeological resources and human remains would be equivalent with implementation of SCE's proposed APMs. Potential impacts would be more widespread during construction and O&M due to the longer linear length of Alternative A compared to the GKR Project.

#### 6.1.1.5.2 Alternatives B and C

The routes included under Alternatives B and C have not been surveyed for cultural or historical resources, therefore no determination of comparative potential impacts can be made.

### *6.1.1.6 Paleontological Resources*

#### 6.1.1.6.1 Alternative A

Compared with the GKR Project, potential impacts under Alternative A to paleontological resources would be equivalent with implementation of SCE's proposed APMs. Potential impacts would be more widespread during construction and O&M due to the longer linear length of Alternative A compared to the GKR Project.

#### 6.1.1.6.2 Alternatives B and C

The routes included under Alternatives B and C have not been surveyed for paleontological resources, therefore no determination of comparative potential impacts can be made.

### *6.1.1.7 Routine Transport, Use, or Disposal of Hazardous Materials*

#### 6.1.1.7.1 Alternatives A, B, and C

Compared with the GKR Project, potential impacts from the routine transport, use, or disposal of hazardous materials would be equivalent with implementation of SCE's proposed APMs under any Alternative. Potential impacts would be more widespread during construction and O&M due to the longer linear length over which work under Alternative A, Alternative B, and Alternative C would be performed compared to the GKR Project.

#### *6.1.1.8 Generation of a Substantial Temporary or Permanent Increase in Ambient Noise Levels*

##### 6.1.1.8.1 Alternative A

Under Alternative A, a greater number of sensitive receptor locations could be exposed to noise during construction that exceed the local significance threshold, and thus impacts would be greater in the short term and more widespread. The long-term impacts would be equivalent to that under the GKR Project, although the impacts would be more widespread.

##### 6.1.1.8.2 Alternatives B and C

Under Alternatives B and C, the same single sensitive receptor location would be exposed to the same level of noise during construction as under the GKR Project; therefore, the short-term impacts would be equivalent. The long-term impacts would be equivalent, and the short- and long-term impacts would be no more widespread.

## 6.2 Alternatives Ranking

Table 6.2-1 summarizes the comparison results discussed above. On the whole, given the entirety of the information analyzed in this PEA, and considering all of the CEQA impact criteria and the relative impacts presented by the Alternatives' increased scopes of work and the greater linear lengths where work will be performed when compared to the proposed GKR Project, the GKR Project is the environmentally superior project.

Page intentionally left blank.

**Table 6.2-1. Alternatives Ranking**

| CEQA Impact Criterion | Proposed Project | Alternative A | Alternative B | Alternative C |
|---|---|---|---|---|
| Cumulatively considerable net increase of any criteria pollutant | Less than Significant with Mitigation | • Short-term impacts greater<br>• Long-term impacts greater<br>• Impacts more widespread | • Short-term impacts greater<br>• Long-term impacts greater<br>• Impacts more widespread | • Short-term impacts greater<br>• Long-term impacts greater<br>• Impacts more widespread |
| Species identified as candidate, sensitive, or special-status | Less than Significant with Mitigation | • Short-term impacts greater<br>• Long-term impacts greater<br>• Impacts more widespread | • Short-term impacts greater<br>• Long-term impacts greater<br>• Impacts more widespread | • Short-term impacts greater<br>• Long-term impacts greater<br>• Impacts more widespread |
| Riparian habitat or other sensitive natural communities | Less than Significant with Mitigation | • Short-term impacts greater<br>• Long-term impacts greater<br>• Impacts more widespread | • Short-term impacts same<br>• Long-term impacts less<br>• Impact no more localized or widespread | • Short-term impacts greater<br>• Long-term impacts greater<br>• Impacts more widespread |
| State or federally protected wetlands | Less than Significant with Mitigation | • Short-term impacts greater<br>• Long-term impacts greater<br>• Impacts more widespread | • Short-term impacts same<br>• Long-term impacts less<br>• Impacts more widespread during construction and more localized during operation | • Short-term impacts same<br>• Long-term impacts less<br>• Impacts more widespread during construction and more localized during operation |
| Archaeological Resource | Less than Significant with Mitigation | • Short-term impacts same<br>• Long-term impacts same<br>• Impacts more widespread | • Not analyzed; route not surveyed | • Not analyzed; route not surveyed |
| Human Remains | Less than Significant with Mitigation | • Short-term impacts same<br>• Long-term impacts same<br>• Impacts more widespread | • Not analyzed; route not surveyed | • Not analyzed; route not surveyed |
| Paleontological resource or site | Less than Significant with Mitigation | • Short-term impacts same<br>• Long-term impacts same<br>• Impact no more localized or widespread | • Not analyzed; route not surveyed | • Not analyzed; route not surveyed |
| Routine transport, use, or disposal of hazardous materials | Less than Significant with Mitigation | • Short-term impacts same<br>• Long-term impacts same<br>• Impacts more widespread | • Short-term impacts same<br>• Long-term impacts same<br>• Impacts more widespread | • Short-term impacts same<br>• Long-term impacts same<br>• Impacts more widespread |
| Generation of a substantial temporary or permanent increase in ambient noise levels | Less than Significant with Mitigation | • Short-term impacts greater<br>• Long-term impacts same<br>• Impacts more widespread | • Short-term impacts same<br>• Long-term impacts same<br>• Impacts more widespread | • Short-term impacts same<br>• Long-term impacts same<br>• Impacts more widespread |

Page intentionally left blank.

# 7 Cumulative and Other CEQA Considerations

This Chapter presents the results of a cumulative impacts analysis for the GKR Project, and an analysis of the potential growth-inducing impacts associated with the project.

## 7.1 Cumulative Impacts

This section analyzes the potential cumulative impacts related to the GKR Project.

The CEQA requires lead agencies to consider the cumulative impacts of proposals under their review. Section 15355 of the CEQA Guidelines defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." According to Section 15130(a)(1), a cumulative impact "is the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions." The cumulative impacts analysis "would examine reasonable, feasible options for mitigating or avoiding the GKR Project's contribution to any significant cumulative effects" (Section 15130(b)(3)).

Section 15130(a)(3) also states that an environmental document may determine that a project's contribution to a significant cumulative impact would be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund its fair share of mitigation measure(s) designed to alleviate the cumulative impact.

In conducting a cumulative impacts analysis, the proper frame of reference is the temporal span and spatial areas in which the project would cause impacts. In addition, a discussion of cumulative impacts must include either:

- a list of past, present, and probable future projects, including, if necessary, those outside the lead agency's control; or
- a summary of projections contained in an adopted general plan or related planning document, or in a previously certified EIR, which described or evaluated regional or area-wide conditions contributing to the cumulative impact, provided that such documents are referenced and made available for public inspection at a specified location (Section 15130(b)(1)).

The term "probable future projects" includes: approved projects that have not yet been constructed; projects that are currently under construction; projects requiring an agency approval for an application that has been received at the time a Notice of Preparation (NOP) is released; and projects that have been budgeted, planned, or included as a later phase of a previously approved project (Section 15130(b)(1)(B)(2)). A listing of projects meeting these criteria within 2 miles of the GKR Project alignment are listed in Table 7.1-1, along with an identification number, a brief description, the jurisdiction in which it is located, distance from the GKR Project alignment, status, and anticipated construction schedule.

The following subsections discuss whether—when combined with past, present, planned, and probable future projects in the area—the project could result in significant short-term or long-term environmental impacts. Short-term impacts are generally associated with construction of the project and cumulative projects, while long-term impacts are those that result from permanent project features or operation and maintenance of the cumulative projects. No material changes in operation and maintenance activities are anticipated with implementation of the project, and therefore with the exception of aesthetics, there would be no cumulative long-term impacts generated by the GKR Project.

### 7.1.1 List of Cumulative Projects

Review of the Governor's Office of Planning & Research's CEQAnet database of the State Clearinghouse (SCH), and the Los Angeles County Department of Regional Planning, City of Arvin Planning Division, and City of Bakersfield Planning Division websites revealed no past, present, or probable future projects located within two miles of the GKR Project alignment. Review of LPNF and SNF NEPA Project websites revealed no past, present, or probable future projects located within two miles of the GKR Project alignment. The cumulative projects identified for the project are presented in Table 7.1-1.

**Table 7.1-1. Cumulative Projects within 2 Miles**

| Project | Description | Location | Distance | Status | Anticipated Schedule |
|---|---|---|---|---|---|
| AE-1: Expansion of District Distribution System Pipelines into Groundwater Service Area Lands | Construction of up to 44 miles of pipelines, manholes and turnouts. | Segment 1 | 0 | Approved | Unknown |
| CT-1. Kern Canyon Culvert Rehabilitation | Repair, replace, and clean culverts. Two new culverts and one overside drain will be built, 355 roadside signs will be replaced, and various Intelligent Transportation Systems will be installed at 11 locations. | Segment 1/ SR-178 | 0 | In Design | Construction: August 2022-2023 |
| HSR-1. High-Speed Rail | Construct high-speed rail infrastructures between Bakersfield and Palmdale. | Segment 1 | 0 | In Permitting | Unknown |
| TR-1 Grapevine at Tejon Ranch | Master planned development | Segment 2/ Lebec | 0 | Approved | Unknown |
| TR-2. Mountain Village at Tejon Ranch | Master planned development | Segments 2 and 3/ Lebec | 0 | Approved | Unknown |

Sources
AE-1: https://ceqanet.opr.ca.gov/2021040213; accessed 15 Oct 2021
CT-1: https://dot.ca.gov/-/media/dot-media/district-6/documents/d6-environmental-docs/06-0x080/sr178-krn-cnyn-clvrt-f-060x080-1220.pdf; accessed 15 Oct 2021
HSR-1: https://hsr.ca.gov/high-speed-rail-in-california/project-sections/bakersfield-to-palmdale/; accessed 15 Oct 2021
TR-1: https://ceqanet.opr.ca.gov/2014041005/5; accessed 15 Oct 2021
TR-2: https://kernplanning.com/environmental-doc/tejon-mountain-village/; accessed 15 Oct 2021

### 7.1.2 Geographic Scope

The geographic scope of analysis for each resource topic is constrained to those areas where work under the GKR Project would be performed or, for aesthetics, those areas where work under the project would be visible.

### 7.1.3 Cumulative Impact Analysis

#### *7.1.3.1 Aesthetics*

As discussed in Section 5.1, the GKR Project would have either no or less than significant impacts under all Aesthetics criteria. As presented in Section 5.1, the project would have no impacts on any scenic vista or on scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway.

The project would result in incremental permanent visual changes that would not substantially alter or degrade the existing visual character in the area. Cumulative Projects HSR-1, TR-1, and TR-2 would also result in permanent visual changes that would degrade the existing visual character in the area. The project, consisting of only the replacement of existing subtransmission infrastructure with new infrastructure, would result in less than significant impacts as described in Section 5.1. Because the project would not substantially degrade the existing visual character or quality of public views, and because the change associated with the project would be subservient to the changes associated with Cumulative Projects HSR-1, TR-1, and TR-2 (all of which represent the addition of new infrastructure and buildings in the environment), the project would not contribute to a cumulatively considerable impact.

Neither the GKR Project nor any of the Cumulative Projects would be a source of considerable glare; Cumulative Projects TR-1 and TR-2 would be new sources of light, but because the project would not be a new source of light, the project would not contribute to a cumulatively considerable impact.

#### *7.1.3.2 Agriculture and Forestry Resources*

As presented in Section 5.2, the GKR Project would result in no impacts under all agriculture and forestry-related CEQA criteria; therefore, the project would not contribute to a cumulatively considerable impact.

#### *7.1.3.3 Air Quality*

As presented in Section 5.3, the GKR Project would have no impact in terms of conflicting with or obstructing implementation of an applicable air quality plan, and thus would not contribute to any cumulatively considerable impact.

Emissions during the construction phase would include criteria air pollutants that could contribute to existing or projected violations of the ambient air quality standards for ozone, $PM_{10}$, and $PM_{2.5}$. With the implementation of APMs, the project's less than significant impacts would not result in a cumulatively considerable net increase of a criteria pollutant.

The project's less than significant impacts in terms of creating objectionable odors and exposing sensitive receptors to substantial pollutant concentrations would not contribute to a cumulative impact: because the odors and pollutant concentrations disperse rapidly with distance, and because few (if any) of the identified Cumulative Projects would overlap the project's construction work in time or space and in proximity to a potential receptor, the project would not contribute to any cumulative impact.

#### *7.1.3.4 Biological Resources*

The geographical area evaluated for cumulative impacts on biological resources includes areas directly affected by construction as well as adjacent habitat potentially affected by construction activities. The geographical extent of the cumulative impact analysis also includes federal and state-regulated jurisdictional wetlands and other waters of the U.S.

Construction could affect plant, amphibian, reptilian, avian, and mammalian species identified as candidate, sensitive, or special-status species, and Cumulative Projects listed in Table 7.1-1 would have the potential for similar effects where those projects' activities occur in the presence or habitat of these species. As discussed in Section 5.4, all impacts associated with the GKR Project would be reduced to a less-than-significant level with the implementation of APMs. Impacts to sensitive species and habitats during construction: (a) would be temporary and intermittent in nature (lasting only as long as construction work at a given site); and (b) would be limited in their potential geographic scope. In addition, none of the identified Cumulative Projects would overlap the project's construction work in time and space, and the Cumulative Projects would be expected to adhere to federal and state regulations promulgated for the protection of sensitive species. Therefore, no cumulatively considerable impact to sensitive species or their habitats would be anticipated.

As stated in Section 5.4, sensitive natural communities would be temporarily impacted. The small area of sensitive natural communities that would be permanently impacted would not result in a significant contribution to any cumulative impact to these communities and would not reduce the overall availability of these habitats.

The project would result in both temporary and permanent impacts to wetlands. Compliance with applicable state and federal regulations (including Section 404 and 401 of the Clean Water Act) and compliance with applicable permit conditions would ensure that wetland impacts are less than significant. It is assumed that the Cumulative Projects would also result in less than significant impacts through similar compliance, and thus no cumulatively considerable impact to wetlands is anticipated.

No component of the project would result in permanent interference with the movement of any species. Therefore, the project would not contribute to any cumulative impact.

The GKR Project construction and operation would not conflict with any local policies or ordinances protecting biological resources, including trees. Cumulative projects would be expected to comply with local policies, ordinances, and the conditions of applicable permits. Therefore, the project's contribution to any cumulatively considerable impact would not be cumulatively considerable and would be less than significant.

The project would not conflict with any Habitat Conservation Plans; Natural Community Conservation Plans; or other approved local, regional, or state habitat conservation plans. Therefore, the project would not contribute to a cumulatively considerable impact involving conflicts with adopted natural resource plans.

#### *7.1.3.5 Cultural Resources*

Impacts to cultural resources are generally site- and resource-specific, and therefore potential cumulative impacts may be realized if two or more projects occur in the same location. The geographic scope of potential cumulative cultural resource impacts is limited to the immediate vicinity of ground-disturbing activities that would occur during construction. Construction work areas included under the GKR Project would spatially overlap areas where work would occur under each of the Cumulative Projects except CT-1; each of the Cumulative Project proponents would be expected to comply with state and federal law relating to cultural resources. With implementation of APMs, the project's contribution to any cumulative impacts would be less than significant and would not be cumulatively considerable.

#### *7.1.3.6 Energy*

As presented in Section 5.6, the GKR Project would result in no or less than significant impacts under all energy-related CEQA criteria. Construction of the Cumulative Projects would, like the GKR Project, consume energy resources during construction; the executors of the Cumulative Projects would, like SCE, not waste, unnecessarily use, or inefficiently consume energy resources. Therefore, the GKR Project would not contribute to any cumulatively considerable impact.

#### *7.1.3.7 Geology and Soils*

Geological hazards are generally site-specific and depend on localized geologic and soil conditions. The GKR Project would have less than significant impacts under all geology and soils-related criteria, particularly because during construction of the project, SCE would comply with applicable laws, regulations, ordinances, and permits, and would implement BMPs, SWPPPs, and APMs where applicable. It is expected that those engaged in the construction of all Cumulative Projects would similarly comply. Therefore, no cumulative impact would be realized under any of the Cumulative Projects, and the GKR Project's less than significant impacts would not be cumulatively considerable and would be less than significant.

#### *7.1.3.8 Greenhouse Gas Emissions*

As presented in Section 5.8, GKR Project construction would result in emissions of GHGs from on-site construction equipment and off-site worker trips. Over the entire construction period of the project, approximately 4,495 $MTCO_2e$ would be emitted. GHG construction emissions from the project amortized over 30 years is approximately 150 $MTCO_2e$. The 150 $MTCO_2e$ emissions associated with GKR Project construction would be well below the thresholds of significance established by the SCAQMD and EKAPCD. Therefore, the GKR Project would not generate, either directly or indirectly, GHG emissions that would have a significant impact on the environment. As a result, the project's contribution to any cumulative impacts would not be cumulatively considerable and would be less than significant.

As presented in Section 5.8, GHG emissions from construction of the GKR Project would fall well below the established numerical threshold of significance. Therefore, the project would not conflict with any applicable plan, policy, or regulation and would have a less than significant contribution to cumulative impacts resulting from any Cumulative Project's conflict with such plans, policies, or regulations.

#### *7.1.3.9 Hazards and Hazardous Materials*

The geographic scope for hazardous materials impacts includes areas near GKR Project sites that could be affected by a release of hazardous materials, including schools within 0.25 miles. Impacts from such releases are usually site-specific and localized. The geographic scope also includes areas affected by the Cumulative Projects listed in Table 7.1-1, including downgradient air, water bodies, groundwater, and areas subject to wildland fire hazards. Materials delivery routes are also included to account for the potential impacts from a traffic accident-related spill.

The project would not be constructed on a site listed as a hazardous materials site pursuant to Section 65962.5; and thus would not contribute to any cumulative or significant hazard to the public or the environment from construction on such a site.

The project is not located within an airport land use plan or within two miles of a public airport or public use airport, and thus would not contribute to any cumulative impact related to this criterion.

The project would not create a significant hazard to air traffic from the installation of new power lines and structures, and thus would not contribute to any cumulative impact related to this criterion.

The project would not create a significant hazard to the public or environment through the transport of heavy materials using helicopters, and thus would not contribute to any cumulative impact related to this criterion.

The project would not expose people to a significant risk of injury or death involving unexploded ordnance, and thus would not contribute to any cumulative impact related to this criterion.

The project would not expose workers or the public to excessive shock hazards, and thus would not contribute to any cumulative impact related to this criterion.

The project could emit hazardous emissions and/or hazardous or acutely hazardous materials, substances, or waste is likely to be handled within one-quarter mile of an existing school; as presented in Section 5.9, these impacts would be less than significant. Cumulative Project TR-2 would be developed in this same area. However, the project and Cumulative Project TR-2 would not overlap temporally, and therefore no cumulative impact would result.

The project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. It is anticipated that the project and all Cumulative Projects would not overlap temporally or spatially; therefore, there would be no cumulative impact.

The project presents less than significant impacts related to impairing the implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan. It is anticipated that the project and all Cumulative Projects will not overlap temporally or spatially; therefore, there would be no cumulative impact to the implementation or physical interference with such plans.

The project's construction would result in less than significant impacts associated with the transport, use, disposal, or foreseeable upset of, or accidents involving, hazardous materials during construction with the implementation of APMs. Cumulative projects would be expected to implement BMPs and adhere to all applicable laws and regulations to reduce to less than significant the potential impacts from use of hazardous materials from those projects. Therefore, there would be no cumulatively considerable impacts related to the transport, use, disposal or upset involving hazardous materials.

The potential for igniting vegetation would be minimized through the measures presented in Section 5.9. The Cumulative Projects would be expected to implement similar measures. Therefore, construction of the project would have a less than significant impact to risk of loss, injury, or death involving wildland fires, and the GKR Project's contribution to any cumulative impacts would not be cumulatively considerable and would be less than significant.

#### *7.1.3.10 Hydrology and Water Quality*

The geographic context for the cumulative impacts associated with hydrology and water quality consists of the watersheds and groundwater basins presented in Section 5.10; all Cumulative Projects are located in the same watersheds and groundwater basins as the GKR Project.

The project is not located in a tsunami or seiche zone. Portions of the project are located in a flood hazard zone; Cumulative Projects are also located in these same flood hazard zones. In the unlikely event of flooding or threatened flooding, The project construction crews would evacuate in accordance to established evacuation plans and routes. Therefore, construction equipment would not be subject to inundation, and the project would not contribute to a cumulatively considerable impact.

No water quality standards or waste discharge requirements would be violated during construction or operation of the project. The project would result in less than significant impacts related to the degradation of surface and ground water quality, and therefore would not contribute to a cumulatively considerable impact.

The project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge and therefore would not contribute to a cumulatively considerable impact.

The project would not substantially alter the existing drainage pattern of the site or area, and therefore would not contribute to a cumulatively considerable impact.

SCE would implement measures as described in Section 3.5.11 to ensure no substantial erosion or siltation occurs on- or off-site; similar measures would be employed for the Cumulative Projects in accordance with state and federal regulations, and thus no cumulatively considerable impact would occur.

SCE would implement measures as described in Section 3.5.11 to ensure no substantial increase in the rate or amount of surface runoff occurs; similar measures would be employed for the Cumulative Projects in accordance with state and federal regulations, and thus no cumulatively considerable impact would occur.

The GKR Project would not create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; therefore, no cumulatively considerable impact would occur.

Only less than significant impacts would be realized under the project; therefore, no cumulatively considerable hydrology and water quality-related impacts would be realized.

#### *7.1.3.11 Land Use and Planning*

As presented in Section 5.11, the GKR Project would result in no impacts under the land use and planning-related CEQA criteria; therefore, the project would not contribute to any cumulative impact.

#### *7.1.3.12 Mineral Resources*

As presented in Section 5.12, the GKR Project would result in no impacts under all mineral resources-related CEQA criteria; therefore, the project would not contribute to a cumulative impact.

#### *7.1.3.13 Noise*

As presented in Section 5.13, the GKR Project would result in no impacts regarding the generation of excessive groundborne vibration or groundborne noise levels, and thus would not contribute to any cumulative impact. The GKR Project is not located within the vicinity of a private airstrip or an airport land use plan, or within two miles of a public airport or public use airport, and therefore has no impact related to this impact criterion and would not contribute to any cumulative impact. The GKR Project would have a less than significant impact, after implementation of APMs, related to the generation of a substantial temporary increase in ambient noise levels at a single location along the GKR Project alignment. None of the cumulative projects would occur in the vicinity of this single location, and therefore the GKR Project would not contribute to any cumulative impact.

#### *7.1.3.14 Population and Housing*

As presented in Section 5.14, the GKR Project would result in no impacts under the population and housing-related CEQA criteria; therefore, the project would not contribute to any cumulatively considerable impact.

#### *7.1.3.15 Public Services*

As presented in Section 5.15, the GKR Project would result in no impacts; therefore, the GKR Project would not contribute to a cumulative impact.

#### *7.1.3.16 Recreation*

As presented in Section 5.16, the GKR Project would result in no impacts under all recreation-related CEQA criteria except with respect to access to recreational facilities. Under that CEQA criterion, the project would present less than significant impacts attributable to the temporary reduction of access to Fort Tejon State Historic Park. None of the Cumulative Projects would overlap with the project in this area, and therefore there would be no cumulative impact.

#### *7.1.3.17 Transportation*

The geographic scope for cumulative transportation impacts includes the regional and local roadways that may be used to access the GKR Project or that could otherwise be impacted by construction of the project. The geographic scope also includes the bus routes and pedestrian and bike paths in the area.

Based on the number of daily vehicle trips generated during construction, and the implementation of an APM and the fact that the Cumulative Projects are not expected to produce traffic that overlaps the construction phase of the GKR Project, the GKR Project would not create any inconsistency or conflict with an applicable plan, ordinance or policy that establishes measures of effectiveness, and therefore would not contribute to a cumulatively considerable impact in this regard.

Project construction would not change air traffic patterns or locations. SCE would implement FAA recommendations regarding the installation of marker balls, to the extent feasible. Helicopter operations would be conducted in accordance with FAA regulations. None of the Cumulative Projects would likely include any air transportation, and therefore the project would not result in cumulatively considerable impacts to air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

The project would not introduce incompatible uses or design features such as changes to public roads. Therefore, the project would not contribute to any cumulatively considerable impact involving hazards due to a design feature or incompatible uses.

The project would not conflict or be inconsistent with CEQA Guidelines Section 15065.3, subdivision (b), and therefore would not contribute to any cumulatively considerable VMT-related impact.

In combination with the fact that construction activities would be of short duration and performed in remote and largely-uninhabited areas, implementation of traffic control measures would ensure that the project does not result in inadequate emergency access. It is unlikely that the project and any Cumulative Project would overlap temporally and spatially, and therefore, the project would have no contribution to any cumulatively considerable impacts.

#### *7.1.3.18 Tribal Cultural Resources*

The CPUC will consult with eligible tribes under PRC Section 21080.3.1 once the Application is complete. Impacts on TCRs are not addressed in this PEA because under AB 52, the CPUC must identify these resources during consultation. Therefore, no determination can be made at this time.

#### *7.1.3.19 Utilities and Service Systems*

As presented in Section 5.19, the GKR Project would result in no impacts under all utilities and service systems-related CEQA criteria; therefore, the project would not contribute to any cumulatively considerable impact.

#### *7.1.3.20 Wildfire*

As presented in Section 5.20, the GKR Project would result in no or less than significant impacts under all wildfire-related CEQA criteria. None of the Cumulative Projects are expected to temporally overlap the project, and therefore the less than significant impacts in terms of impairing an adopted emergency response plan or emergency evacuation plan would not contribute to a cumulatively considerable impact.

The project presents less than significant impacts related to impairing the implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan. It is anticipated that the project and all Cumulative Projects will not overlap temporally or spatially; therefore, there would be no cumulative impact to the implementation or physical interference with such plans.

Where the GKR Project and Cumulative Projects geographically overlap, the topographical relief is generally low and there are few people or structures located immediately downstream or downslope, and thus the less than significant impacts of the project associated with downstream flooding or landslides as a result of runoff, post-fire slope stability, or drainage changes would not contribute to a cumulatively considerable impact.

## 7.2 Growth-Inducing Impacts

### 7.2.1 Growth-Inducing Impacts

Section 15126.2(e) of the CEQA Guidelines states that environmental documents should "[d]iscuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly in the surrounding environment."

A project could be considered to have growth-inducing effects if it:

- Either directly or indirectly fosters economic or population growth or the construction of additional housing in the surrounding area
- Removes obstacles to population growth
- Requires the construction of new community facilities that could cause significant environmental effects
- Encourages and facilitates other activities that could significantly affect the environment, either individually or cumulatively

An EIR must describe any growth-inducing impacts of a proposed project including "the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment" (Pub. Res. Code § 21100(b)(5); 14 CCR §§ 15126(d), 15126.2(d)). Examples of projects that are growth-inducing are the expansion of urban services into a previously unserved or under-served area, the creation or extension of transportation links, and the removal of major obstacles to growth. It is important to note that these direct forms of growth have secondary effects including expanding the size of local markets and attracting additional economic activity to the area.

Typically, the growth-inducing potential of a project will be considered significant if it fosters growth or a concentration of population above what is assumed in local and regional land use plans, or in projections made by regional planning authorities. Significant growth-inducing impacts could also occur if a project provides infrastructure or service capacity to accommodate growth levels beyond those permitted by local or regional plans and policies.

#### *7.2.1.1 Would the Project either directly or indirectly, foster economic or population growth or the construction of additional housing in the surrounding area?*

**No Impact.** As presented in Chapter 2, the fundamental objective of the GKR Project is to remediate identified discrepancies. The project would not induce economic growth, as it would not provide new electrical service or electrical service to areas that are currently unserved or underserved. In addition, the project does not include any new infrastructure such as publicly accessible roads that could either directly or indirectly foster economic or population growth.

As presented in Section 5.14, Population and Housing, the project would not foster, either directly or indirectly, population growth in the area. SCE expects to utilize up to approximately 85 workers per day. The labor demands of the project would be met by existing SCE employees or by hiring specialty electrical transmission contractors, none of whom would be expected to permanently relocate to the area around the project solely as a result of construction activities. Given the small number of positions required for construction of the project and the short term of the construction period, no population growth would be fostered, either directly or indirectly, by the rebuilding of the subtransmission lines.

As further presented in Section 5.14, the project would not displace any existing housing or people, and thus would not foster, either directly or indirectly, the construction of additional housing. Therefore, no impacts would occur under this criterion.

#### *7.2.1.2 Would the Project remove obstacles to population growth?*

**No Impact.** Growth in Kern County, Los Angeles County, and the cities of Arvin and Bakersfield is planned and regulated by applicable local general plans and planning and zoning ordinances. The provision of electricity is generally not considered an obstacle to growth nor does the availability of electrical capacity by itself normally ensure or encourage growth. Other factors such as economic conditions, land availability, population trends, availability of water supply or sewer services, and local planning policies have a more direct effect on growth. The GKR Project, which is proposed to remediate discrepancies on existing circuits, not to provide new electrical service, will not remove obstacles to population growth. Therefore, no impacts would occur under this criterion as a result of the project.

#### *7.2.1.3 Would the Project require the construction of new community facilities that could cause significant environmental effects?*

**No Impact.** As discussed in Section 5.14, Population and Housing, the GKR Project would not include the construction of housing, and would not trigger population growth that could result in the construction of any new or upgraded community facilities such as parks or libraries. In addition, the project would not build public roads that would provide new access to undeveloped or underdeveloped areas, or extend the need for public services to new areas. Therefore, the project would not require the construction of new community facilities that could cause significant environmental effects.

#### *7.2.1.4 Would the Project encourage or facilitate other activities that could significantly affect the environment, either individually or cumulatively?*

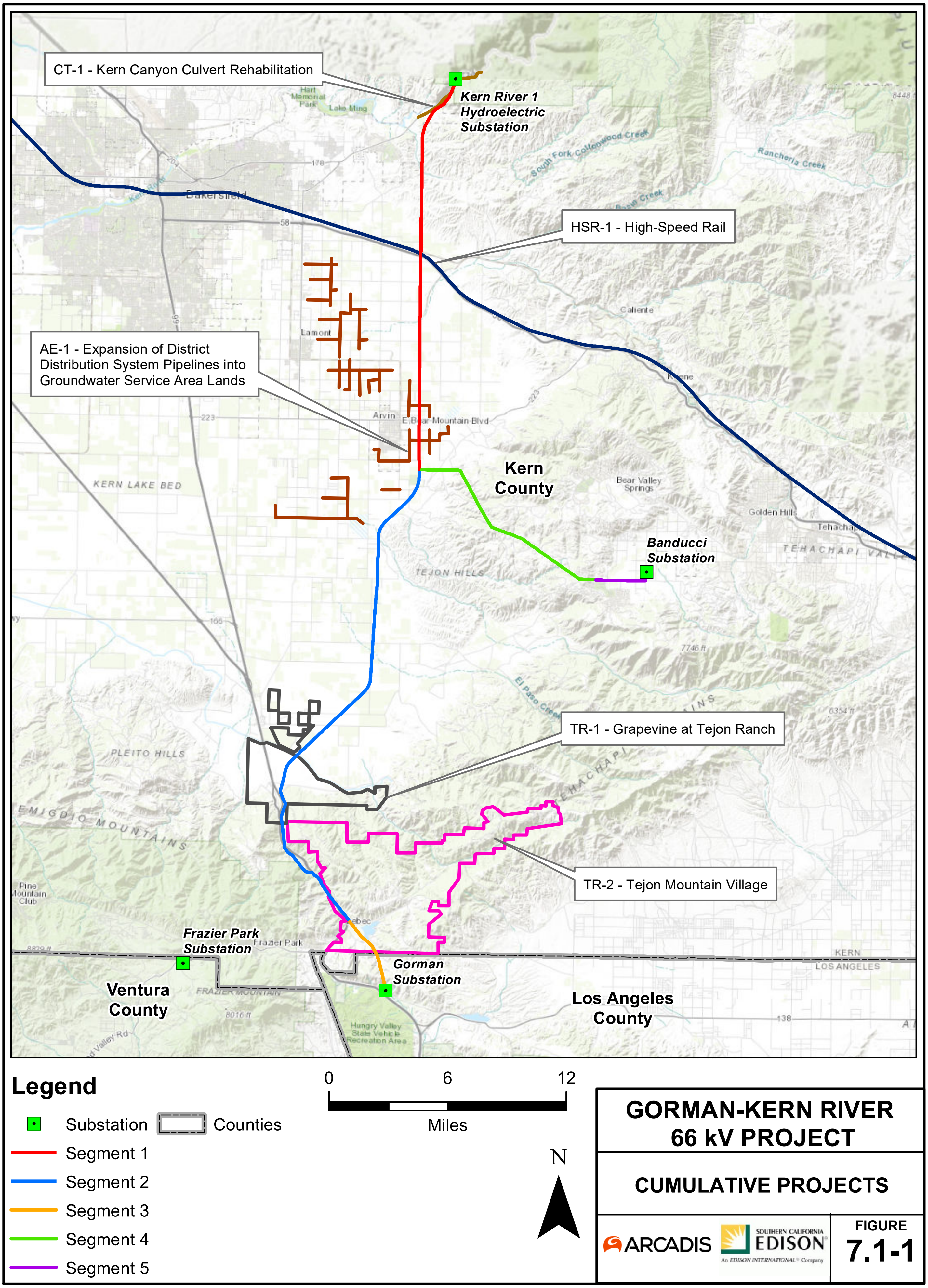
**No Impact.** As discussed herein, the GKR Project would not encourage or facilitate other activities that could significantly affect the environment, either individually or cumulatively.

The project would not build new permanent access roads that would provide new access to undeveloped or underdeveloped areas.

Although the project would increase the reliability of electric transmission by replacing aging infrastructure with new infrastructure (which is likely less prone to failure), the project would not provide a new source of electricity that would encourage or facilitate other activities that could significantly affect the environment, either individually or cumulatively.

Further, as presented in Chapter 2, resolving identified discrepancies to ensure compliance with standards contained in GO 95 while also addressing reliability concerns associated with aging infrastructure is the driver for the Purpose and Need for the project, not future generation interconnections. As stated in Section 3.2.2.2, the project would not change the existing capacity of the system, and thus would not facilitate any potential growth and growth-related environmental effects.

In addition, other factors, most notably public policy and federal land management policies, would seem to be more likely to influence whether additional activities would result in interconnections to any facility associated with the project.




**GORMAN-KERN RIVER 66 kV PROJECT**

**CUMULATIVE PROJECTS**

ARCADIS

SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL® Company

FIGURE **7.1-1**

T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\Kern\Figure7-1-1_Cumulative_Projects_KERN.mxd 10/25/2021 4:58:44 PM

# 8 List of Preparers

## 8.1 List of Preparers

**<u>SOUTHERN CALIFORNIA EDISON</u>**

Robert Atkinson, Power System Operations Specialist

Anthony Barranda, Regulatory Affairs & Compliance, Sr. Advisor

Brian J. Bielfelt, Environmental Science, Advisor, MS Wildlife Management and Science, Texas A&M University-Kingsville

Michele Chan, Real Estate & Facilities, Advisor

Kara Donohue, Avian Program Manager, MS Raptor Biology, Boise State University

Vicky Furnish, Senior Manager, Registered Environmental Health Specialist (REHS), MA National Security Affairs, Naval Postgraduate School, BS Biology, Saint Mary's College of California

Kevin Garrity, P.E., Engineering Project Manager, PhD Electrical Engineering, University of Southern California

Jack Goldfarb, Herpetology Program Manager, MS Biology, East Stroudsburg University of Pennsylvania

John R. Johnsen, Remediation Program Manager, Registered Environmental Health Specialist (REHS-CA), BA Biology, California State University-Northridge

Sheridan Mascarenhas, Transmission & Distribution Integrated System Analysis, Sr. Advisor, MBA International Business, California State University-Los Angeles

Roger Overstreet, Biology Program Manager, BS Biological Sciences, California Polytechnic State University-San Luis Obispo

Wen Pei, P.E., Propriety Telecom Systems, Sr. Advisor, MS Electrical Engineering, California State University-Los Angeles

George Perez, Electrical Transmission/Distribution Sr. Project Manager, BS Business Management, University of Phoenix, Project Management Certificate, University of California, Irvine

Alex Podruski, Business Operations Analysis, Advisor

Raymond Pok, Government Relations, Sr. Advisor

Rachael Poston, Environmental Science, Advisor, MS Biological Sciences, California State University-Long Beach

Bethmarie Quiambao, Air Quality and Climate Change Specialist, BS Urban and Regional Planning, California Polytechnic University-Pomona

Scott Richtmyer, Engineer, BS Geology, University of California-Santa Barbara

Kirk Riehl, Manager-Project/Product 2, 50 years Transmission Line Experience, AA Degree

Blanca G Solares, Major Construction Project Manager, BS Electrical Engineering, California State University-Los Angeles, Project Management Certificate, University of California, Irvine, MBA Leadership & Management, University of La Verne

Stephanie Tsai, Real Estate & Facilities, Advisor, BA, Environmental Earth Science, University of California-Berkeley

Karen Whiteside, Water Quality, Certified Professional in Erosion & Sediment Control, Qualified SWPPP Developer/Qualified SWPPP Practitioner, BS Civil Engineering (with Environmental Engineering), University of Southern California

Audry Williams, Senior Archaeologist, MA Anthropology/Archaeology, California State University-Bakersfield

Paul Yamazaki, Restoration Project Manager, BS Environmental Studies (Natural Sciences), University of Southern California

**ARCADIS**

Steve Beadle, P.G., P.E., Senior Geologist, PhD, Earth and Planetary Sciences, Johns Hopkins University

Mary Carroll, Senior Ecologist, MA Biological Sciences, University of California-Santa Barbara

Bryan Chen, Senior Environmental Engineer, MS Environmental Engineering, Johns Hopkins University, LEED Green Associate

Adam Davis, Project Planner, BS Environmental Science, BS Political Science, University of Oregon

Majdi Elzayat, Transmission Project Manager – Power Delivery, PhD Civil Engineering, University of Sheffield

Chris Garvin, P.E., Principal Engineer, MBA Colorado State University

Brian Glenn, Senior Archaeologist, MA Archaeology, University of California-Los Angeles

Rory Henneck, Management Consultant 3, BA Linguistics, Western Washington University

Lee Miles, AICP, Principal Environmental Scientist, LEED Green Associate, MA Geography, California State University-East Bay

Conrad Mulligan, Principal Planner, MSc Marine Policy, London School of Economics and Political Science

Cynthia Nicely, Senior Ecologist, MS Ecology, San Francisco State University

Lindsay Rindler, Staff Environmental Scientist, BA Ecology, Evolution, and Environmental Biology, Columbia University

Geetha Shanmugasundaram, P.E., Power Delivery Lead, BS Electrical Engineering, University of Tennessee-Chattanooga

Bob Wanex, P.E., Principal Engineer, BS Electrical Engineering, University of Florida

**ENVIRONMENTAL VISION**

Charles Cornwall, APA, MS Landscape Architecture, University of California at Berkeley

Marsha Gale, ASLA, MS City and Regional Planning, MS City & Regional Planning, MS Landscape Architecture, University of California at Berkeley

**JD ENGINEERING, PC**

Scott Turner, Principal Engineer, BS Electrical Engineering, Washington State University

**MATERIAL CULTURE CONSULTING, INC.**

Tria Belcourt, RPA, M.A., Anthropology, University of Florida

Sonia Sifuentes, RPA, M.Sc., Archaeology of the North, University of Aberdeen

**MESA ASSOCIATES, INC.**

William (Greg) Ford, P.E., BS Electrical Engineering, Tennessee Technological University

**URBANA PRESERVATION & PLANNING, LLC**

Wendy L. Tinsley Becker, RPH, AICP, Master of City Planning, San Diego State University.

**WILSON ENVIRONMENTAL**

A.L. Wilson, MSE, Environmental Engineering, University of Florida.

Page intentionally left blank.

# 9 References

## 9.1 Reference List

### 9.1.1 Aesthetics


Arvin, City of. 2012. Arvin General Plan Update. Adopted August 21, 2012.

Bakersfield, City of. 2016. Metropolitan Bakersfield General Plan. Adopted December 3, 2002. Updated January 20, 2016.

Benchmark Maps. 2017. California Road and Recreation Atlas. Santa Barbara, California.

California Department of Transportation. 2019. California Scenic Highway Program. Available at https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways

California Public Utilities Commission (CPUC). 1995. Public Utilities Commission of the State of California, General Order No. 131-D. Adopted August 11, 1995. Decision 95-08-038.

California Department of Parks and Recreation. 1989. Fort Tejon State Historic Park General Plan.

California Department of Parks and Recreation. 2017. Fort Tejon State Historic Park. Website. Available at: http://www.parks.ca.gov/?page_id=585.

California State Parks. Office of Historic Preservation. California Landmarks and Points of Historic Interest. Available at http://ohp.parks.ca.gov/?page_id=21387

Kern County. 2017. Kern County Zoning Ordinance. Available at https://psbweb.co.kern.ca.us/planning/pdfs/KCZONov2017.pdf.

Kern County. 2010. Greater Tehachapi Area Specific and Community Plan. Available at https://psbweb.co.kern.ca.us/planning/pdfs/SPs/gtasp_final.pdf

Kern County. 2009. Kern County General Plan. Amended through September 22, 2009. Available at https://kernplanning.com/planning/planning-documents/general-plans-elements/

Los Angeles County. 2015. General Plan 2035. Adopted October 6, 2015. Available at: http://planning.lacounty.gov/generalplan/

Los Angeles County. 2017. General Plan Figure 9.7 Scenic Highways. Updated April 2017. Available at: http://planning.lacounty.gov/assets/upl/project/gp_2035_2017-FIG_9-7_scenic_highways.pdf.

U.S. Department of Agriculture. Forest Service. 1995. Landscape Aesthetics: A Handbook for Scenery Management. USDA Agriculture Handbook No. 701.

U.S. Department of Agriculture, Forest Service. 2005. Land Management Plan, Part 2 Los Padres National Forest Strategy. Available at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5337817.pdf

U.S. Department of Agriculture, Forest Service. 2019. Revised Draft Land Management Plan for the Sequoia National Forest. Available at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd640156.pdf

U.S. Department of Transportation. 2015. Visual Impact Assessment for Highway Projects. Available at http://www.environment.fhwa.dot.gov/guidebook/documents/VIA_Guidelines_for_Highway_Projects.asp#f

### 9.1.2 Agriculture and Forestry Resources

California Department of Forestry and Fire Protection (CALFIRE). 2015. FVEG database. Available from http://frap.fire.ca.gov/data/statewide/fveg15_1.zip http://frap.fire.ca.gov/data/statewide/fveg15_1.zip http://frap.fire.ca.gov/data/statewide/fveg15_1.zip http://frap.fire.ca.gov/data/statewide/fveg15_1.zip http://frap.fire.ca.gov/data/statewide/fveg15_1.zip http://frap.fire.ca.gov/data/statewide/fveg15_1.zip http://frap.fire.ca.gov/data/statewide/fveg15_1.zip http://frap.fire.ca.gov/data/statewide/fveg15_1.zip http://frap.fire.ca.gov/data/statewide/fveg15_1.zip http://frap.fire.ca.gov/data/statewide/fveg15_1.zip http://frap.fire.ca.gov/data/statewide/fveg15_1.zip http://frap.fire.ca.gov/data/statewide/fveg15_1.zip http://frap.fire.ca.gov/data/statewide/fveg15_1.zip http://frap.fire.ca.gov/data/statewide/fveg15_1.zip http://frap.fire.ca.gov/data/statewide/fveg15_1.zip http://frap.fire.ca.gov/data/statewide/fveg15_1.zip

California Department of Conservation. 2017a. Kern County Important Farmland GIS Data. Farmland Mapping and Monitoring Program. [Online Resource]. Located at

http://www.conservation.ca.gov/dlrp/fmmp/Pages/Kern.aspx

California Department of Conservation. 2017b. Los Angeles County Important Farmland GIS Data. Farmland Mapping and Monitoring Program. [Online Resource]. Located at

http://www.conservation.ca.gov/dlrp/fmmp/Pages/LosAngeles.aspx

City of Arvin. 2012. General Plan. Available at http://www.arvin.org/wp-content/uploads/2015/08/ADOPTED_ARVIN_GP_UPDATE_Aug-21-121.pdf

City of Bakersfield. 2002. General Plan. Available at http://www.bakersfieldcity.us/civicax/filebank/blobdload.aspx?BlobID=31381

Kern County. 2009. General Plan. Available at https://kernplanning.com/planning/planning-documents/general-plans-elements/

Kern County Board of Supervisors. 2013. Agricultural Preserve Standard Uniform Rules. Available at https://kernplanning.com/?document=1499

Los Angeles County. 2015. General Plan 2035. Available at http://planning.lacounty.gov/assets/upl/project/gp_final-general-plan.pdf

### 9.1.3 Air Quality

California Air Resources Board (CARB). 2016. Ambient Air Quality Standards. May. Located at http://www.arb.ca.gov/research/aaqs/aaqs2.pdf

CARB. 2021a. iADAM: Air Quality Data Statistics. Located at http://www.arb.ca.gov/adam/

CARB. 2021b. Air Quality and Meteorological Information System. Located at http://www.arb.ca.gov/aqmis2/aqmis2.php

California Air Pollution Control Officers Association (CAPCOA). 2017. California Emissions Estimator Model (CalEEMod). http://www.caleemod.com\

Eastern Kern County Air Pollution Control District (EKAPCD). 2012. Guidelines for Implementation of the California Environmental Quality Act (CEQA). March.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2015. Air Quality Thresholds of Significance – Criteria Pollutants. Available: http://www.valleyair.org/transportation/0714-GAMAQI-Criteria-Pollutant-Thresholds-of-Significance.pdf

South Coast Air Quality Management District. 2009. Localized Significance Thresholds. Accessed at: www.aqmd.gov/ceqa/handbook/LST/LST.html

SCAQMD. (2011). SCAQMD Air Quality Significance Thresholds. [Web Page]. Located at http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2

Swiss Federal Office of Civil Aviation (FOCA). 2015. Guidance on the Determination of Helicopter Emissions. Edition 2. December.

### 9.1.4 Biological Resources

Altman, B. 2017. *Conservation Assessment for Oregon Vesper Sparrow* (*Pooecetes gramineus affinis*). American Bird Conservancy. Prepared for USDA Forest Service, Region 6 and USDI Bureau of Land Management, Oregon and Washington Interagency Special Status and Sensitive Species Program

Arcadis U.S., Inc (Arcadis). 2019a. *TLRR Sensitive Species and Habitat Report: Kern River 66 kV Subtransmission Line Project*. Prepared for Southern California Edison. December.

Arcadis. 2019b. *Wetlands and Other Waters Jurisdictional Delineation Report: Kern River 66 kV Subtransmission Line*. Prepared for Southern California Edison. December

Audubon. 2020. I*mportant Bird Areas: Tehachapi Mountains, California*. Accessed online: https://www.audubon.org/important-bird-areas/tehachapi-mountains

Avian Power Line Interaction Committee (APLIC). 2006. Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C. and Sacramento, CA.

Avian Power Line Interaction Committee (APLIC). 2012. Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C. and Sacramento, CA.

California Burrowing Owl Consortium. 1997. *Burrowing Owl Survey Protocol and Mitigation Guidelines.* Appendix B, pp 171-177 in Lincer, J. L. and K. Steenhof, editors. The Burrowing Owl, its biology and management including the Proceedings of the First International Burrowing Owl Symposium. Raptor Research Report Number 9.

California Department of Fish and Wildlife (CDFW). CDFW. 2020a. *Sensitive Natural Communities. Sensitivity Guidelines*. Vegetation Classification and Mapping Program, California Department of Fish and Wildlife https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities#sensitive%20natural%20communities

CDFW. 2020b. *California Natural Communities*. Vegetation Classification and Mapping Program, California Department of Fish and Wildlife. Sacramento, CA. September 2020. https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities#natural%20communities%20lists.

CDFW. 2020c. *Sensitive California Natural Communities*. Vegetation Classification and Mapping Program, California Department of Fish and Wildlife. Sacramento, CA. September 2020. https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities#natural%20communities%20lists.

CDFW. 2020d. *Life History Accounts and Range Maps – California Wildlife Habitat Relationships System*. https://wildlife.ca.gov/Data/CWHR/Life-History-and-Range.

CDFW. 2021a. CDFW Approved Mitigation Service Areas [ds2659]. ArcGIS Feature Service. Available at https://services2.arcgis.com/Uq9r85Potqm3MfRV/arcgis/rest/services/biosds2659_fpu/FeatureServer

CDFW. 2021b. CDFW Owned and Operated Lands and Conservation Easements. ArcGIS Feature Service. Available at https://map.dfg.ca.gov/arcgis/rest/services/Base/Base/FeatureServer/510

California Native Plant Society (CNPS). 2020. *Inventory of Rare and Endangered Plants* (online edition). Rare Plant Scientific Advisory Committee. California Native Plant Society. Sacramento, CA. http://www.cnps.org/inventory

CNDDB. 2020. California Department of Fish and Wildlife *California Natural Diversity Data Base*. RareFind Version 5. Sacramento, California. Database managed by the Biogeographic Data Branch of CDFW. https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data

Center for Natural Lands Management (CNLM). 2020. *Sand Ridge Preserve*. www.cnlm.org/portfolio_page/sand-ridge/

Consortium of California Herbaria (CCH). 2020. *Gateway to California Vascular Plant Specimens*. http://ucjeps.berkeley.edu/consortium

Cornell Lab of Ornithology and National Audubon Society, Inc. (Cornell). 2020a. *eBird*. http://ebird.org/content/ebird.

Cornell Lab of Ornithology and the American Ornithologists Union. (Cornell) 2020b. *The Birds of North American Online*. Accessed online: http://bna.birds.cornell.edu/bna/home/

Environmental Protection Agency (EPA). 2020. *Ecoregion Downloads by State*. Accessed online:https://www.epa.gov/eco-research/ecoregion-download-files-state-region-9#pane-04.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. *The National Wetland Plant List*: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X

Sawyer, J.O., T. Keeler-Wolf, and J. Evens. 2009. Manual of California Vegetation. Second Edition. California Native Plant Society. Sacramento, California. 1,300 pp.

Shuford, W. D., and Gardali, T., editors. 2008. C*alifornia Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California*. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

United States Fish and Wildlife Service (USFWS). 1996. *California Condor Recovery Plan.* Third Revision. Portland, Oregon. 62 pp.

USFWS. 2010. *Blunt-nosed Leopard Lizard (Gambelia sila) 5-Year Review: Summary and Evaluation*. U.S. Fish and Wildlife Service. Sacramento Fish and Wildlife Office. Sacramento, California.

USFWS. 2011. U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance. January 2011. 9 pp.

USFWS. 2020. *ECOS Environmental Conservation Online System*. https://ecos.fws.gov/ecp/report/table/critical-habitat.html

White, M.D., E.R. Pandolfino, and A. Jones. 2011. *Purple Martin Survey Results at Tejon Ranch in the Tehachapi Mountains of California.* Western Birds 42 (3):164-173.

Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. *California's Wildlife*. Vol. I-III. California Depart. of Fish and Game, Sacramento, California.

### 9.1.5 Cultural Resources

Ames, G.W. Jr. 1937. "Fort Tejon Registered Landmark #129". In *California Historical Landmarks Series*. Editor Vernon A. Nsasham, pp. 1-17. Berkeley, CA: State of California, Department of Natural Resources Division of Parks.

Arnold, J.E. 2001. "Social Evolution and the Political Economy in the Northern Channel Islands". In *The Origins of a Pacific Coast Chiefdom: The Chumash of the Channel Islands*. Pp. 287-296. University of Utah Press.

Barras, J. 1984. *Their Places Shall Know Them No More*. Tehachapi: J. and J. Barras self-published

Bennyhoff, J.A. and D.A. Fredrickson. 1994. "A Proposed Integrative Taxonomic System for Central California Archaeology". In *Toward a New Taxonomic Framework for Central California Archaeology: Essays by James A. Bennyhoff and David A. Fredrickson*, edited by R.E. Hughes. pp 15-24. Contributions of the University of California Archaeological Research Facility 52, Berkeley.

Bernard, J.L. 2008. *An Archaeological Study of Resistance, Persistence, and Culture Change in the San Emigdio Canyon, Kern County California*. PhD dissertation, University of California, Los Angeles.

Bettinger, Robert. L. 1991. *Hunter-Gatherers: Archaeological and Evolutionary Theory*. Plenum Press, New York.

Bettinger, Robert. L. 2001. "Holocene Hunter-Gatherers." In *Archaeology at the Millennium*, edited by Feinman and Price, pp 137– 195. Berkeley, CA: Kluwer Academic/Plenum Publishers.

Binford, Lewis R. 1980. "Willow Smoke and Dogs' Tales: Hunter-Gatherer Settlement Systems and Archaeological Site Formation." *American Antiquity* 45:4-20.

Biosystems Analysis, Inc. 1989. *Technical Report of Cultural Resources Studies for the Proposed Wtg-west, Inc. Los Angeles to San Francisco and Sacramento, California Fiber Optic Cable Project*

Blackburn, Thomas C. and Lowell J. Bean. 1978. "Kitanemuk". In *Handbook of North American Indians*, Volume 8, *California*. William C. Sturtevant, general editor, Robert F. Heizer, volume editor, pp. 564-569. Washington D.C.: Smithsonian Institution.

Boyd, W.H. 1972. *A California Middle Border: The Kern River Country, 1772-1880*. Richardson, TX: Havilah Press.

Brewer, C. 2001. *Historic Kern County an Illustrated History of Bakersfield and Kern County.* San Antonio: Historical Publishing Network, a division of Lammert Publications, Inc.

Brooks, G.R. 1977. *The Southwest Expedition of Jedediah S. Smith*. Arthur H. Clark Company

Brossard, D. 2014. History of The Tehachapi Loop. Available online at: http://www.theloopnewspaper.com/story/2014/06/07/community/history-of-the-tehachapi-loop/615.html. Last accessed on January 22, 2018.

Castillo, E.D. 1978. "The Impact of the Euro-American Exploration and Settlement." In *Handbook of North American Indians*, Volume 8, *California*. William C. Sturtevant, general editor, Robert F. Heizer, volume editor, pp. 99-127. Washington D.C.: Smithsonian Institution.

California Department of Transportation. 2007. *A Historical Context and Archaeological Research Design for the Agricultural Properties in California.*

California State Parks. 2010. *Fort Tejon State Historic Park.* Brochure. Available online at http://www.parks.ca.gov/pages/585/files/FortTejonSHPFinalWeb062916.pdf. Last accessed on December 28, 2017

Chandler, E. and M. Kay. 2017. *Historic Built Environment Documentation and Evaluation: Transmission Line Rating and Remediation Licensing-Kern River No. 1 66kV Project, Kern County, California.* Prepared for Southern California Edison.

Comfort, H. G. 1934. "The Founding of Fort Tejon". In *Where Rolls the Kern: A History of Kern County*. Moorpark, CA: Enterprise Press.

Cowboy Showcase. 2018. "Basque Ranching Culture in the Great Basin." *Cowboy Showcase*. Available online at: http://www.cowboyshowcase.com/basque-ranching.html#.WmYrsKinGM8. Last accessed January 22, 2018.

Crowe, E. 1957. *Men of El Tejon*. Los Angeles: The Ward Ritchie Press.

Dumke. G.S. 1954. "The Crossing of the Tehachapi by the Southern Pacific." In *Early Transportation in Southern California.* Edited by Robert J. Wood. No. 10. Pasadena, California: Grant Dahlstrom/The Book Club of California.

Echeverria, J. 1999. *Home Away from Home: A History of Basque Boardinghouses.* Reno, Nevada: University of Nevada Press.

Egurrola, G.T. 2003. "Ethnic Industries for Migrants: Basque Sheepherding in the American West."*Euskonews & Media*. Available online at: http://www.euskonews.com/0212zbk/kosmo21201.html. Last accessed on January 22, 2018.

Electric World. 1907. "Kern River No. 1 Power Plant of the Edison Electric Co. – Part 1." *Electric World*. 50(6): 277-281. Available online at: https://reference.insulators.info/publications/view/?id=3473. Last accessed January 22, 2018.

Fredrickson, David A., and Joel W. Grossman. 1977. "A San Dieguito Component at Buena Vista Lake, California." *Journal of California Anthropology* 4(2):173– 190.

Garfinkel, A. 2015. *Archaeological Background for the San Joaquin Valley, Central California*. Available online at: http://www.academia.edu/14721089/Archeological_Background_for_the_San_Joaquin_Valley_Central_California. Last accessed: December 19, 2017.

Grant, Campbell. 1978. “Interior Chumash.” In *Handbook of North American Indians, Vol 8: California*. edited by R. F. Heizer. pp 530-534. Washington D.C: Smithsonian Institute.

Gossard, G.H. 2007. *Tehachapi.* Mount Pleasant: Arcadia Publishing.

Hammerson, Geoffrey. 2010. *Batrachoseps stebbinsi*. The IUCN Red List of Threatened Species 2010: e T2648A3465166. Available online at: http://dx.doi.org/10.2305/IUCN.UK.2010-2.RLTS.T2648A9465166.en. Last accessed on December 18, 2017.

Hartzell, L.L. 1992. *Hunter-Gatherer Adaptive Strategies and Lacustrine Environments in the Buena Vista Lake Basin, Kern County, California*. Ph.D. dissertation, Department of Anthropology, University of California, Davis.

Harvey, V. 2011. *Archaeological Investigations at the Hospital/Commissary Site, Fort Tejon State Historic Park, Kern County, California*, Master’s thesis, California State University, Bakersfield.

Harvey V. and A. Williams. 2004. *A Cultural Resources Assessment of 57 Acres in Tehachapi, Kern County, California.*

Heizer, R.F. 1978. “Treaties” In *Handbook of North American Indians, Vol 8: California*. William C. Sturtevant, general editor, R. F. Heizer, volume editor, pp. 701-704. Washington D.C.: Smithsonian Institution

Hudson and Blackburn. 1982. *The Material Culture of the Chumash Interaction Sphere Vol. 1: Food Procurement and Transportation*. Los Altos: Ballena Press.

Johnson, J. R. 1997. “Indians of Mission San Fernando, who later lived at Rancho El Tejón.” Extracted from “Indians of Mission San Fernando.” In *Mission San Fernando Rey de Espana, 1797-1997*, edited by D. B. Nunis Jr. *Historical Society of Southern California Quarterly*. 79(3). pp 249-290. Available online at: http://www.vredenburgh.org/tehachapi/data/tejon01.htm#35. Last accessed December 22, 2017.

Johnson, J. R. 2000. Mat’apxwelxwel Ethnohistory. In *Archaeological Passages: A Volume in Honor of Claude Nelson Warren*, Vol. 1, edited by Joan S. Schneider, Robert M. Yohe II, and Jill K. Gardner, pp. 24-39. Western Center for Archaeology and Paleontology Publications in Archaeology No. 1. Hemet, California.

Johnson, J.R. and D.D. Earle. 1990. “Tataviam Geography and Ethnohistory”. *Journal of California and Great Basin Anthropology*. 12(2): 191-214.

Johnston, H. 1984. *The Railroad that Lighted Southern California*. Third Edition. Glendale, California: Trans-Anglo Books.

Jones, T.L. and K.A. Klar. 2007. *California Prehistory: Colonization, Culture, and Complexity*. Lanham: AltaMira Press

Karnes, T.L. 2009. *Asphalt and Politics, A History of the American Highway System.* Jefferson, North Carolina: McFarland & Company, Inc.

Kelly, J. L. and G. Stammerjohan. 1990. Site record CA-KER-2848/H. On file at the Southern San Joaquin Valley Information Center, Bakersfield, CA.

Kern County Library. 2012. “Map of Sebastian Indian Reservation (Military Reserve)”. Available online at: https://www.flickr.com/photos/kerncountylibrary/8268279932/in/photolist-46uZse-a6ncMu-5XyFmo-

5Wttvz-aB8iaS-jSBVX8-jSt251-dAD6yy-oqfvxm-e6Z8Gx-bAn8Hr-nkvq3s-YU76Kw-khE3X-8GFSCD-7CE2KB-5URMZ9-5URWwE-aQZAcn-7CHMGA-7CHQuu-7CHQuC-7CHMGG-7CHMGL-7CHQuq-EMsvNG-KrobV4-7CE2Kv-7CHMGJ-7CHMGN-piLVAB-ouuWsE-dGbt2v-FsGqcR-FyNhKJ-HJTyXG-Fqq5JC-ujFPEQ-FyNj3o-Kp3egW-7CHQuA-7CHQus Last accessed on December 28, 2017.

King, C., Smith, C., and King, T. 1974. Archaeological Report Related to the Interpretation of Archaeological Resources Present at Vasquez Rocks County Park. MS on file at the Department of Parks and Recreation, Los Angeles County)

King, C. and T.C. Blackburn. 1978. "Tataviam." In *Handbook of North American Indians*, Volume 8, *California*. William C. Sturtevant, general editor, R. F. Heizer, volume editor, pp. 564-569. Washington D.C.: Smithsonian Institution

Kroeber, A.L. 1976. *Handbook of Indians of California*. Reprint of 1925 original edition, Dover Publications, New York.

Latta, F. F. 1949. *Handbook of the Yokuts Indians*. Santa Cruz: Bear State Books

Latta, F. F. 1976. *Saga of Rancho El Tejon*. Santa Cruz: Bear State Books

Lesley, L.B. 1936. "A Southern Transcontinental Railroad to California: Texas and Pacific versus Southern Pacific, 1865-1885." *Pacific Historical Review*. 5(1): pp. 52 -60.

Macko, M.E, Binning, J.D., Earle, D.D, and Langenwalter, P.E. 1993. *National Register Eligibility Determinations for Historic Resources Along the Proposed AT&T Lightguide System, Victorville to Bakersfield, California*. Prepared for Lilburn Corporation.

Mason, R.D., Bonner, W.H., Popper, S.L., Popper, V.S., Origer, T.M., and Shackely, M.S. 2001. *Results of Archaeological Data Recovery at CA-KER-3367, CA-KER-3370, and CA-KER-1558 Level (3) Long Haul Project, Segment WS04 Tehachapi Workaround, Kern County, California*. Prepared for Level (3) Project Office.

McGuire, K., Glover, L., Berg, J., and Riggs, D. 1990. *A Cultural Resources Inventory and Limited Evaluation of the Proposed Mojave Pipeline Corridor in California and Arizona.* Prepare for Woodward-Clyde Consultants

McLendon, S. and J.R. Johnson (eds.) 1999. *Cultural Affiliation and Lineal Descent of Chumash Peoples in the Channel Islands and Santa Monica Mountains.* Prepared for the Archaeology and Ethnography Program, National Park Service, Washington D.C.

Mikesell, S.D. 1988. *Historic Resource Evaluation Report Kern River No. 1 Power House 6-KER-178, 15.3, 06-275701.* Prepared for Department of Transportation District 6 – Fresno Environmental Branch.

Molter, J.J. 2014. "Things Learned Pursuing the Reestablishment of Monument No. 660." *Castor Canadensis*. Spring 2014.

Monastero, A.P., Lloyd, J.B., and Armstrong, M.D. 2014. *Cultural Resource Studies for the Redwood Cluster Solar Project, Kern County, California*. Prepared for 61LK 8ME, LL

Moratto, M. J. 1984. *California Archaeology*. Orlando: Academic Press.

Morgan, W. M. 1914. *The History of Kern County, California.* Historic Record Company, Los Angeles, California.

Myers, W.A. 1983. *Iron Men and Copper Wires: A Centennial History of the Southern California Edison Company.* Glendale, California: Trans-Anglo Books.

National Park Service. 2004. “A History of American Indians in California: Historic Sites Tejon Indian Reservation.” Available online at https://www.nps.gov/parkhistory/online_books/5views/5views1h92.htm. Last accessed on August 21, 2019.

Natural Resources Conservation Service. 2010. “Web Soil Survey.” United States Department of Agriculture. Available online at https://websoilsurvey.sc.egov.usda.gov/. Last accessed September 24, 2017.

Naylor, L. and N. Roach. 2017. *Perognathus alticola*. The IUCN Red List of Threatened Species 2017: e T16631A22224213. Available online at: http://dx.doi.org/10.2305/IUCN.UK.2017-2.RLTS.T16631A22224213.en. Last Accessed on December 18, 2017.

Nilsen, Tor H. 1987. “Stratigraphy and Sedimentology of the Eocene Tejon Formation, Western Tehachapi and San Emigdio Mountains, California”. *Geological Survey Professional Paper 1268*. Washington: United States Government Printing Office.

Norris, R. M. and R. W. Webb. 1976. *Geology of California*. New York: John Wiley & Sons, Inc

O’Loughlin, G.L. 1993. "West End Exterior of Kern River No. 1 Powerhouse Building Showing Switchracks on South Side and Pacific Gas and Electric Company Kern River Canyon Powerhouse Forebay Structure in Foreground. Kern River No. 1 Forebay Overflow Pipe is Visible Above Powerhouse, View to Northeast." Photograph, Historic American Engineering Record, National Park Service, U.S. Department of the Interior, From Prints and Photographs Division, Library of Congress (HAER CAL, 15-BAKF,V,1A—1; http://www.loc.gov/pictures/item/ca2021.photos.315325p/resource/). Last accessed January 22, 2018.

Olson, D. 2014. California montane chaparral and woodlands. Available online at: https://www.worldwildlife.org/ecoregions/na1203. Last accessed December 18, 2017.

Olson D. and Cox R. 2014. California Central Valley grasslands. Available online at: http://worldwildlife.org/ecoregions/na0801. Last accessed October 2, 2017.

Orfila, Rebecca S. 2005. *Investigations at the San Emigdio Adobe Complex (CA-KER-188H), Kern County, California*. Master’s thesis, California State University, Bakersfield.

Orfila, Rebecca S. 2011. *A Phase I Cultural Resources Assessment of Telecommunications Lines, Subtransmission Extension Lines, and Proposed Substation Locations for the Banducci 66/12kV “B” Substation Project in Kern County, California*. Prepared by RSO Consulting Cultural and Historical Resource Management.

Pearce, D., Stritthold, J., Watt, T., and Elkind, E. 2016. *A Path Forward: Identifying Least-Conflict Solar PV Development in California’s San Joaquin Valley*. Center for Law, Energy & the Environment Publications, Paper 1.

Price, Barry. 2002. “A Clovis Point from the Sierra National Forest.” *Society for California Archaeology Newsletter* 36(1). pp. 15-16.

Ptomey, S.M. 2000a. *Preliminary Historic Structure Report: Barracks #1 Fort Tejon State Historic Park.*

Ptomey, S.M. 2000b. *Archaeological Test Excavation Report: Fort Tejon State Historic Park Lower Officers Quarters*.

Redinger, D.H. 1949. *The Story of Big Creek*. Los Angeles, California: Angelus Press.

Riddell, F.A. 2002. "The Status of San Joaquin Valley Archaeology." In *Essays in California Archaeology*: *A Memorial to Franklin Fenenga*, edited by William J. Wallace and Francis A. Riddell. pp. 55-61. University of California Archaeological Research Facility, Contribution Number 60, Berkeley.

Rosenthal, Jeffrey S., Gregory G. White, and Mark Q. Sutton. 2007. "The Central Valley: A View from the Catbird's Seat." In *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn A. Klar. pp 147-163. Lanham, Maryland: Alta Mira Press.

Robinson, D.W. 2006. *Landscape, Taskscape, and Indigenous Perception: The Rock-Art of South-Central California*. Ph.D. dissertation, Department of Anthropology, University of Cambridge, England.

Roland, C., Goodson, H., Moffett, C., and Slattery, C. 2011. *U.S. Highway 66 in California,* National Register of Historic Places Multiple Property Documentation Form (Washington D.C., Department of the Interior), E4.

Scott, H.I. 2002. *Ridge Route: The Road that United California.* Torrance: Harrison Irving Scott Publisher.

Shipley, W.F. 1978. "Native Languages of California." In *Handbook of North American Indians, Vol 8: California*. William C. Sturtevant, general editor, R. F. Heizer, volume editor, pp. 80-90. Washington D.C.: Smithsonian Institution.

Sutton, M.Q. 1980. "Some Aspect of Kitanemuk Prehistory". *Journal of California and Great Basin Anthropology* 2(2): 214-225.

Sutton, M.Q. 1996. The Current Status of Archaeological Research in the Mojave Desert. *Journal of California and Great Basin Anthropology* 18(2): 221-257.

Sutton, M. Q., and Des Lauriers, M.R. 2002. "Emerging Patterns in Obsidian Usage in the Southern San Joaquin Valley, California." *Pacific Coast Archaeological Society Quarterly*. 38(2,3). pp 1-18.

Sutton, M.Q., Gardner, J.K., and Gobalet, K.W. 2010. "Archaeological Investigations at the Big Cut Site (CA-KER-4395), Buena Vista Lake, California." *Pacific Coast Archaeological Society Quarterly,* 46(1&2) pp. 1-33.

Sutton, M. Q., Gardner, J.K., Gobalet, K.W., and Valente, N. 2016. "Archaeological Investigations at the Manifold Site (CA-KER-4220), Buena Vista Lake, Southern San Joaquin Valley, California." *Pacific Coast Archaeological Society Quarterly*. 52(4), pp 15-82.

Switalski, H. and R. Larkin. 2013. *Archaeological Survey Report for the Proposed Plains All American Pipeline, L.P. Consent Decree Line 63 Repair Project (Garlock Fault/Tejon Gully and Tejon Pump Station), Tejon Ranch, Kern and Los Angeles Counties, California.* Prepared for Plains All American Pipeline, L.P.

Taylor, T.T. 1994. *HAER No. CA-165-A Photographs, Written Historical and Descriptive Data*. Prepared for the Historic American Engineering Record, National Park Service.

Tejon Ranch. 2017. "History." Available online at: http://tejonranch.com/the-company/corporate-values/history/. Last accessed on December 28, 2017.

Tinsley, W. 2015. *Class III Cultural Resources Inventory for Southern California Edison's Coolwater-Lugo Transmission Project, San Bernardino County, California – Volume 1: Historic-Era Built Environment Survey Report.* Prepared for Southern California Edison.

Underwood, J. and J.H. Cleland. 2002. *Cultural Resources Survey of Line 1903, All American Pipeline Conversion Project from Mettler, Kern County California to Daggett, San Bernardino County, California.* Prepared for ENSR International.

Urbana Preservation & Planning, LLC. 2017. *Historic-Era Electrical Infrastructure Management Program: A Program for the Identification, Review, Exemption, and Treatment of Generating Facilities, Transmission Lines, Subtransmission Lines, Distributions Lines, and Substations within the Southern California Edison Company's Service Territory.*

Walker, A.M. 1946. *Francisco Garcés Pioneer Padre of Kern.* Kernville: Kern County Historical Society.

Wallace, W.J. 1978. "Southern Valley Yokuts." In *Handbook of North American Indians, Vol 8: California*. William C. Sturtevant, general editor, R. F. Heizer, volume editor, pp. 701-704. Washington D.C.: Smithsonian Institution.

Williamson, R.S. 1856. *Reports of Explorations and Surveys, to Ascertain the Most Practicable and Economical Route for a Railroad from the Mississippi River to the Pacific Ocean,* Vol. 5. Made Under the Direction of the Secretary of War, in 1853-1854. Washington D.C.: A.O.P. Nicholson.

Worden, L. 2015. "Treaty Between the United States and the Indians of "Castaic, Tejon, Etc.," 1851." Available online at: https://scvhistory.com/scvhistory/heizer1972.htm. Last accessed on December 28, 2017.

Zigmond, M.L. 1986. "Kawaiisu". In *Handbook of North American Indians, Vol. 11 Great Basin*, W.L. d'Azenedo, ed., pp. 398-411. Washington: Smithsonian Institution.

### *9.1.5.1 Historic Background References*

Applied Earthworks. Cultural Resources Survey and Evaluation for the Arvin-Edison Water Storage District Water Conservation and Efficiency Project, Kern County, California. 2015.

Autobee, Robert. Friant Division, Central Valley Project. Bureau of Reclamation, 1994.

Barras, Judy. Their Places Shall Know Them No More. Tehachapi: CA, self-published, 1984.

Becker, Wendy L. Tinsley and Heather Crane. Big Creek Hydroelectric System, East and West Transmission Line Historic American Engineering Record Report No. CA-167-N. San Diego, CA: Urbana Preservation and Planning, 2012.

BioSystems Analysis, Inc. Technical Report of Cultural Resources for the Proposed WTGWEST, Inc. Los Angeles to San Francisco and Sacramento, California Fiber Optic Cable Project. Santa Cruz, CA: BioSystems Analysis, Inc., 1989.

Birnbaum, Charles A. Protecting Cultural Landscapes: Planning, Evaluating, and Management of Historic Landscapes, Preservation Brief 36. Washington, DC: U.S. Department of the Interior, National Park Service, 1994.

Bonsal, Stephen. Edward Fitzgerald Beale: A Pioneer in the Path of Empire, 1822-1903. New York: G.P. Putnam's Sons, 1912.

Brewer, Christopher D.  Tevis Block National Register Nomination. Bakersfield, CA: Brewer's Historical Consultants, 1982.

Brewer, Chris. Historic Kern County: An Illustrated History of Bakersfield and Kern County. US: Historical Pub Network, 2002.

Bureau of Reclamation. Finding of No Significant Impact, Arvin-Edison Water Storage District and Metropolitan Water District 2010-2011 Water Exchange Project. Bureau of Reclamation, 2010.

Bureau of Reclamation. Arvin-Edison Water Storage District Water-Energy Conservation & Efficiency Project Environmental Assessment. Bureau of Reclamation, Mid-Pacific Regional Office, 2017.

California Department of Transportation. A Historical Context and Archaeological Research Design for Agricultural Properties in California. Sacramento: Division of Environmental Analysis, 2007.

California Department of Transportation. A Historical Context and Archaeological Research Design for Townsite Properties in California.  Sacramento: California Department of Transportation, 2010.

California Department of Transportation. Tract Housing in California, 1945-1973: A Context for National Register Evaluation. Sacramento, California: Department of Transportation, 2011.

California High-Speed Rail Authority.  Fresno to Bakersfield Project Section Basque Traditional Cultural Properties Study. Sacramento, California: May 2016.

Carle, David. Introduction to Water in California. Berkeley:  University of California Press, 2004.

Castillo, Edward D.  "The Impact of Euro-American Exploration and Settlement" in Handbook of North American Indians: vol. 8, edited by Robert F. Heizer, 99-127. Washington, DC: Smithsonian Institution, 1978.

Comfort, Herbert G. Where Rolls the Kern: A History of Kern County. Moorpark, CA: Enterprise Press, 1934.

Constantine, John H., Julian M. Alston and Vincent H. Smith. Economic Impacts of the California One-Variety Cotton Law. Davis, CA: University of California Davis, 1993.

Crouter, Richard E. and Andrew F. Rolle. "Edward Fitzgerald Beale and the Indian Peace Commissioners in California, 1851-1854," Historical Society of Southern California Quarterly 42: 107-132 (June 1960).

Crowe, Earle. Men of El Tejon: Empire in the Tehachapis. Los Angeles, CA: Ward Ritchie Press, 1957.

Cullimore, Clarence. Old Adobes of Forgotten Fort Tejon. Bakersfield, CA: Kern County Historical Society, 1941; Second Printing 1949.

Dumke, Glenn S. "The Crossing of the Tehachapi by the Southern Pacific," In Early Transportation in Southern California, edited by Robert J. Wood. Pasadena, CA: Grant Dahlstrom/The Book Club of California, 1954.

Gates, Paul W. History of Public Land Law Development. Washington, DC: U.S. Government Printing Office, 1968.

Gates, Paul W.  Land Policies in Kern County. Bakersfield, CA: Kern County Historical Society, 1978.

Gossard, Gloria H., Tehachapi. Mount Pleasant, SC: Arcadia Publishing, 2007.

Haggland, Mary H. "Don José Antonio Aguirre," The Journal of San Diego History, 29: 1 (Winter 1983).

Hardesty, Donald and Barbara Little. Assessing Site Significance: A Guide for Archaeologist and Historians. Lanham, Maryland: Alta Mira Press, 2000.

Harvey, Victoria. Archaeological Investigations at the Hospital/Commissary Site, Fort Tejon State Historic Park, Kern County, California. MA thesis, California State University, Bakersfield, 2011.

Harvey, Victoria and A. Williams, A Cultural Resources Assessment of 57 Acres in Tehachapi, Kern County, California. Brite Meadows, Inc., 2004.

Heizer, Robert F. "Treaties" in Handbook of North American Indians, ed. William C. Sturtevant, vol. 8. Washington D.C.: Smithsonian Institution, 1978, 701-704.

Hoffman, Abraham. Unwanted Mexican Americans in the Great Depression: Repatriation Pressures, 1929-1939. Tucson: University of Arizona Press, 1973.

Igler, David. Industrial Cowboys: Miller & Lux and the Transformation of the Far West, 1850-1920. Berkeley and Los Angeles: University of California Press, 2001.

Impact Sciences, Inc. Jurisdictional Delineation Report for Tejon Mountain Village. Lebec, CA: Tejon Mountain Village, LLC.

Johnson, John R. "Indians of Mission San Fernando, who later lived at Rancho El Tejon, Mission San Fernando Rey de España, 1797-1997," Historical Society of Southern California Quarterly, ed. D. B. Nunis Jr. 79:3 (1997), 249-290.

Johnson, John R. "Mat'apxwelxwel Ethnohistory," in Archaeological Passages: A Volume in Honor of Claude Nelson Warren, pp. 24-39, ed. By Joan S. Schneider, Robert M. Yohe II, and Jill K. Gardner. Hemet, CA: Western Center for Archaeology and Paleontology, 2000.

Johnson, John R. Ethnohistory of the Tejon Indian Tribe. 2016.

Johnson, John R. and Sally McLendon, Cultural Affiliation and Lineal Descent of Chumash Peoples in the Channel Islands and the Santa Monica Mountains. Archeology and Ethnography Program, National Park Service, Washington, DC. Department of Anthropology, Hunter College, City University of New York and Santa Barbara Museum of Natural History, Santa Barbara, 1999.

JRP Historical Consulting Services and the California Department of Transportation Environmental Program/Cultural Studies Office. Water Conveyance Systems in California: Historic Context Development and Evaluation Procedures. Sacramento, 2000.

Kane, Bonnie Ketterl. A View from the Ridge Route: The Fort Tejon Era. Frazier Park, CA; Ridge Route Communities Museum and Historical Society, 2006.

Kane, Bonnie Ketterl. Welcome to Lebec. Ridge Route Communities Museum and Historical Society, June 22, 2017.

Keller, J. Timothy and Genevieve P. Keller. How to Evaluate and Nominate Designed Historic Landscapes, National Register Bulletin 18. Washington, D.C.: U.S. Department of the Interior, National Park Service, 1987.

Knowlton, Ezra C. History of Highway Development in Utah. Salt Lake City, Utah: State Road Commission, 1963.

Latta, Frank F.  El Camino Viejo Los Angeles - The Oldest Road of the San Joaquin Valley. Exeter, CA: Bear State Books, 2006.

Lentz-Meyer, Margo. Guide to the Fort Tejon State Historic Park Collection. McClellan, CA: California State Parks Archives, 2015.

Lesley, L.B.  "A Southern Transcontinental Railroad to California: Texas and Pacific versus Southern Pacific, 1865- 1885," Pacific Historical Review 5(1): 1936, 52 -60.

Locklear, Arlinda F. The Tejon Tribe Request for Confirmation of Status. Jefferson, MD: 2006.

Ludeke, John.  "The No Fence Law of 1874: Victory for San Joaquin Valley Farmers," California History, Vol. 59, No. 2 (Summer, 1980).

Lutz, Margaret P. Weedpatch Camp National Register Nomination. Lamont, CA: Lamont Women's Club, 1995.

McClelland, Linda Flint, J. Timothy Keller, Genevieve P. Keller, and Robert Z. Melnick. Guidelines for Evaluating and Documenting Rural Historic Landscapes, National Register Bulletin 30. Washington, D.C.: U.S. Department of the Interior, National Park Service, 1990.

McGuire, Kelly R., L. Glover, J. Berg, and D. Riggs. A Cultural Resources Inventory and Limited Evaluation of the Proposed Mojave Pipeline Corridor in California and Arizona. California: Woodward-Clyde Consultants, 1990.

Macko, Michael E., Jeanne D. Binning, David D. Earle, and Paul E. Langenwalter. National Register Eligibility Determination for Historic Resources Along the Proposed AT&T Lightguide System, Victorville to Bakersfield, California. Huntington Beach, CA: Macko Archeological Consulting, 1993.

Mason, Samuel.  Hard Work: The Okie Migration to Kern County, California. MA thesis, San Diego State University, 2010.

Masters, Nathan.  From Footpaths to the Grapevine: A Brief History of Southern California's Ridge Route.  Los Angeles, CA: KCET, November 1, 2012.

Melnick, Robert Z., Daniel Sponn, and Emma J. Saxe. Cultural Landscapes: Rural Historic Districts in the National Park System. Washington, DC: U.S. Department of the Interior, National Park Service, 1984.

Merlan, Thomas. Historic Homesteads and Ranches in New Mexico: A Historic Context. Santa Fe, New Mexico: Historic Preservation Division Office of Affairs, 2008.

Meyer, Lisa M. ed. Western Area Power Administration Desert Southwest Region's Facilities Historic Context Statement. Phoenix, AZ: September 2014.

Mikesell, Stephen D. Historic Resource Evaluation Report, Kern River No. 1 Powerhouse. Sacramento, CA: Caltrans, 1988.

Mikesell, Stephen D. Evaluation of National Register Eligibility for the Borel System. Davis, CA: JRP Consulting Services, 1998.

Milburn, Douglas H. and Harrison I. Scott.  Old Ridge Route National Register Nomination. Arcadia, CA: Angeles National Forest, 1997.

Monastero, Andrew P., J.B. Lloyd, and M.D. Armstrong. Cultural Resource Studies for the Redwood Cluster Solar Project, Kern County, California. Bakersfield, CA: 61LK 8ME, LLC, 2014.

Morgan, Wallace M. History of Kern County, California, with Biographical Sketches of the Leading Men and Women of the County Who Have Been Identified With Its Growth and Development From the Early Days to the Present. Los Angeles, CA: Historic Record Company, 1914.

Morton, W. Brown III. Decatur House National Register Nomination. Washington, DC: National Park Service, 1971.

Myers, William A.  Iron Men and Copper Wires: A Centennial History of the Southern California Edison Company. Trans-Anglo Books, 1983.

National Park Service.  Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. US: Washington, D.C., 1983.

National Park Service. Guidelines for Local Surveys: A Basis for Preservation Planning National Register Bulletin 24. US: Washington, D.C., 1985.

National Park Service. National Register Bulletin 16B, How to Complete the National Register Multiple Property Documentation Form.  US: Washington, D.C. 1991; revised 1999.

National Park Service. "A History of American Indians in California: Historic Sites Tejon Indian Reservation," Five Views: An Ethnic Historic Site Survey for California (US: Washington, D.C. 2004).

National Park Service. Nuestra Señora Reina de la Paz Cultural Landscape Overview. Eugene, Oregon: University of Oregon, 2013.

Nealand, Daniel. "Archival Vintages for The Grapes of Wrath" Prologue Magazine 40: 4 (Winter 2008).

Orfila, Rebecca S. A Phase I Cultural Resources Assessment of Telecommunications Lines, Subtransmission Extension Lines, and Proposed Substation Locations for the Banducci 66/12kV "B" Substation Project in Kern County, California. RSO Consulting Cultural and Historical Resource Management, 2011.

Owens, Christopher. Ash Hill National Register Nomination. Baltimore: Maryland Parks Commission, 1974.

Parker, Patricia L. and Thomas F. King. Guidelines for Evaluating and Documenting Traditional Cultural Properties, National Register Bulletin 38. Washington, D.C.: US Department of the Interior, National Park Service, 1990.

Pollack, Linda, Polly Allen, and Joshua Peabody.  Big Creek Hydroelectric System Historic District National Register Nomination. Big Creek, CA: Southern California Edison, 2015.

Pisani, Donald J.  "Land Monopoly in Nineteenth-Century California," Agricultural History, Vol. 65, No. 4 (Autumn, 1991).

Ptomey, Steven M. Preliminary Historic Structure Report: Barracks #1, Fort Tejon State Historic Park. January 16, 2000.

Rast, Raymond W.  Nuestra Señora Reina de la Paz National Register Nomination. Fullerton, CA: Cal State University, 2011.

Rast, Raymond W., Gail L. Dubrow, and Brian Casserly. The Forty Acres National Register of Historic Places Nomination. Minneapolis, MN: University of Minnesota, 2007.

Reisner, Marc. Cadillac Desert: The American West and Its Disappearing Water. NY: Penguin Books, 1987.

Roland, C.H., C. Goodson, C. Moffet, and C. Slattery. U.S. Highway 66 in California National Register of Historic Places Multiple Property Documentation Form. Washington, D.C.: National Register of Historic Places, 2011.

Saffell, Cameron Lee. Common Roots of a New Industry: The Introduction and Expansion of Cotton Farming in the American West. Ph.D. diss., Iowa State University, Ames, 2007.

Sifuentes, Sonia and Tria Belcourt. Kern River 66kv Subtransmission. Pomona, CA: Material Culture Consulting, Inc., 2018.

Simonds, Wm. Joe. Central Valley Project Integrated Units of the United States Army Corps of Engineers. Bureau of Reclamation, 1994.

Southern California Edison Company. Historic-Era Electrical Infrastructure Management Program. October 2015.

Stammerjohn, George. The Mythical Fort Tejon Camel Corps. Fort Tejon Historical Association, n.d.

Standiford, Les. Water to the Angels: William Mulholland, His Monumental Aqueduct and the Rise of Los Angeles. US: Ecco (Reprint Edition), 2016.

Starr, Kevin. Inventing the Dream; California through the Progressive Era. New York: Oxford University Press, 1985.

Stein, Walter J. California and the Dust Bowl Migration. Westport, Connecticut: Greenwood Publishing Company, 1973.

Stene, Eric A. The Central Valley Project: Controversies Surrounding Reclamation's Largest Project. US Bureau of Reclamation, 2008.

Stickel, Edwin Gary, Lois J. Weinmen-Roberts, and Pare Hopa. An Overview of the Cultural Resources of the Western Mojave Desert. Sacramento: U.S. Department of the Interior Bureau of Land Management, California State Office, 1980.

Stein, Pat H. Homesteading in Arizona, 1870-1942. Phoenix, AZ: State Historic Preservation Office, 1990.

Switalski, Hubert and Robert Larkin. Cultural and Paleontological Resources Survey Report for Modified Alignment of CO2 Supply Line and Facility Construction (Section 26S), Elk Hills, Kern County, California. 2013.

Taylor, Paul S. "Central Valley Project: Water and Land," Western Political Quarterly, 2: 2, (June 1, 1949) 228-253.

Taylor, Thomas T. Kern River No. 1 Hydroelectric System Historic American Engineering Record Report No. CA-165-A, 1993.

Thompson, Gerald. Edward F. Beale and the American West. Albuquerque: University of New Mexico Press, 1983.

Troy, D., M. Farrell, and J. Sammis. Errea House National Register Nomination. Tehachapi, CA: Tehachapi Heritage League, 1997.

Villarejo, Don. Getting Bigger: Large Scale Farming in California. California Institute for Rural Studies, 1980.

Walker, Ardis M. Francisco Garcés Pioneer Padre of Kern. Kernville: Kern County Historical Society, 1946.

Weingarten, Marc. Thirsty: William Mulholland, California Water and the Real Chinatown. US: Rare Bird Birds, 2015.

Weintraub, Matthew. The Kern River 3 (KR3) Hydroelectric System Historic American Engineering Record Report No. CA-2309. Rosemead, CA: Southern California Edison, 1990.

Williams, Earle E. El Camino Viejo: A Brief History of California's Forgotten Second Highway of the Pioneers. Concord, CA: Oakland National Horse Show, 1970.

Williamson, Lieutenant R. S. Reports of Explorations and Surveys to Ascertain the Most Practical and Economical Route for a Railroad from the Mississippi River to the Pacific Ocean Made Under the Direction of the Secretary of War in 1853-4 Volume V. Washington: U.S. Government Printing Office: 1856.

Wilson, Patricia P. and Nina Leigh. Shafter Research Station National Register Nomination. Shafter, CA: Shafter Historical Society, 1996.

Withey, Henry F. Historic American Buildings Survey Data for Fort Tejon Near Lebec HABS Cal-39. Los Angeles, CA: HABS, 1937.

Wright, M. J. Report of The Surveyor-General of the State of California From August 1, 1894, to August 1, 1896. Sacramento, CA: A. J. Johnson, Superintendent State Printing, 1896.

Zonlight, Margaret Aseman Cooper. Land, Water, and Settlement in Kern County, California, 1850-1890. Arno Press, 1979.

### 9.1.6 Energy

California Renewables Portfolio Standard Program: emissions of greenhouse gases, California Senate Bill 100 (2017-2018), Chapter 312 (Cal Stat. 2018)

City of Arvin. 2012. General Plan. Available at http://www.arvin.org/wp-content/uploads/2015/08/ADOPTED_ARVIN_GP_UPDATE_Aug-21-121.pdf

City of Bakersfield. 2009. Metropolitan Bakersfield General Plan Update: Existing Conditions, Constrains and Opportunities Report. Available at http://docs.bakersfieldcity.us/weblink/0/edoc/787358/Draft%20Existing%20Conditions,%20Constraints%20and%20Opportunities%20Report%20-%20Full%20Report.pdf

Kern County. 2009. Kern County General Plan – Energy Element. Available at http://www.co.kern.ca.us/planning/pdfs/kcgp/KCGP.pdf

Los Angeles County. 2015. General Plan 2035. Available at http://planning.lacounty.gov/assets/upl/project/gp_final-general-plan.pdf

### 9.1.7 Geology, Soils, and Paleontological Resources

#### *9.1.7.1 Geology and Soils*

Branum, D., R. Chen, M. Petersen, and C. Wills. 2016. Earthquake Shaking Potential for California. California Geological Survey, Map Sheet 48, Revised 2016. https://www.conservation.ca.gov/cgs/Documents/MS_048.pdf

California Department of Water Resources (CDWR). 2004a. Brite Valley Groundwater Basin. Basin Number 5-80. February 27. https://water.ca.gov/LegacyFiles/pubs/groundwater/bulletin_118/basindescriptions/5-80.pdf

California Department of Water Resources (CDWR). 2004b. Castac Lake Valley Groundwater Basin. Basin Number 5-29. February 27. https://water.ca.gov/LegacyFiles/pubs/groundwater/bulletin_118/basindescriptions/5-29.pdf

California Department of Water Resources (CDWR). 2004c. Tehachapi East Groundwater Basin. Basin Number 6-45 February 27. https://water.ca.gov/LegacyFiles/pubs/groundwater/bulletin_118/basindescriptions/6-45.pdf

California Department of Water Resources (CDWR). 2004d. Tehachapi West Groundwater Basin. Basin Number 5-28. February 27. https://water.ca.gov/LegacyFiles/pubs/groundwater/bulletin_118/basindescriptions/5-28.pdf

California Department of Water Resources (CDWR). 2006a. Cummings Valley Groundwater Basin. Basin Number 5-27. January 20. https://water.ca.gov/LegacyFiles/pubs/groundwater/bulletin_118/basindescriptions/5-27.pdf

California Department of Water Resources (CDWR). 2006b. San Joaquin Valley Groundwater Basin, Kern County Subbasin. Basin Number 5-22.14. January 20. https://water.ca.gov/LegacyFiles/pubs/groundwater/bulletin_118/basindescriptions/5-22.14.pdf

California Department of Water Resources (CDWR). 2014. Summary of Recent, Historical, and Estimated Potential for Future Land Subsidence in California. http://www.water.ca.gov/groundwater/docs/Summary_of_Recent_Historical_Potential_Subsidence_in_CA_Final_with_Appendix.pdf

California Geological Survey (CGS). 2010a. Interactive Web Maps. Fault Activity Map of California. December 31. https://maps.conservation.ca.gov/geology/#datalist

California Geological Survey (CGS). 2010b. An Explanatory Text to Accompany the Fault Activity Map of California, Scale 1:750,000

http://www.conservation.ca.gov/cgs/cgs_history/Documents/FAM_phamplet.pdf.

California Geological Survey (CGS). 2016. Interactive Web Maps. Map Sheet 48: Earthquake Shaking Potential for California. September 19. https://maps.conservation.ca.gov/geology/#datalist

California Geological Survey (CGS). 2018a. Interactive Web Maps. Alquist-Priolo Fault Traces. January 10. https://maps.conservation.ca.gov/geology/#datalist

California Geological Survey (CGS). 2018b. Interactive Web Maps. Alquist-Priolo Fault Zones. January 10. California https://maps.conservation.ca.gov/geology/#datalist

California Geological Survey (CGS). 2018c. Interactive Web Maps. Deep-Seated Landslide Susceptibility (MS58). November 9. https://maps.conservation.ca.gov/geology/#datalist

EKI. 2019. EKI Technical Presentation #3, Castac Basin GSA Board of Directors. June 4. https://www.castacgsa.org/files/10302db33/EKI+Castac+Basin+Technical+Presentation+2019-06-04.pdf

Kern County. 2004. Revised Update of the Kern County General Plan and Amendment of the Kern County and Incorporated Cities Integrated Waste Management Plan Siting Element. Volume I. Recirculated Draft Program Environmental Impact Report. January. https://www.kerncounty.com/planning/pdfs/kcgp/KCGP_RPEIR_vol1.pdf

Kern County. 2010. Greater Tehachapi Area Specific and Community Plan. December. https://www.kerncounty.com/planning/pdfs/SPs/gtasp_final.pdf

Kern County Fire Department. 2012. Kern Multi Jurisdiction Hazard Mitigation Plan, Comprehensive Update. September. http://www.kerncountyfire.org/operations/divisions/office-of-emergencyservices/emergency-plans/hazard-mitigation-plan.html

Los Angeles County. 1990. Los Angeles County General Plan Safety Element, Plate 4, Liquefaction Susceptibility. January. http://planning.lacounty.gov/assets/upl/project/gp_web80-tech-plates-01-to-08.pdf

Lynch, D.K. 2006. Field Guide to the San Andreas Fault. Thule Scientific, Topanga, California. https://www.thulescientific.com/

Meltzer, A. J. and T.K. Rockwell. The Tejon Pass Earthquake of 22 October 1916: An M 5.6 Event on the Lockwood Valley and San Andreas Faults, Southern California. Seismological Society of America, Bulletin 94:1203-1304. https://authors.library.caltech.edu/47839/1/1293.full.pdf

National Resource Conservation Service (NRCS). 1986. Urban Hydrology for Small Watersheds, Appendix A, Hydrologic Soil Groups. Technical Release 55. June. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044171.pdf

National Resource Conservation Service (NRCS). 2019a. Description of SSURGO Database. https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2_053627

National Resource Conservation Service (NRCS). 2019b. National Soil Survey Handbook, 618.39, https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/ref/?cid=nrcs142p2_054242

Poland, J.F., B.E. Lofgren, R.L. Ireland, and R.G. Pugh. 1975. Land Subsidence in the San Joaquin Valley, California, As of 1972. Available at https://pubs.usgs.gov/pp/0437h/report.pdf

Scheffe, K.F. and S.L. Lacy. 2004. Hydro-Compactible Soils. In: Muckel, G.B. (ed.) Understanding Soil Risks and Hazards. Lincoln, NE: United States Department of Agriculture, Natural Resources Conservation Service, National Soil Survey Center. Pp. 60-64.

Southern California Earthquake Center. 1999. Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction in California. March. http://www-scec.usc.edu/resources/catalog/LiquefactionproceduresJun99.pdf

Southern California Earthquake Data Center. 2019. Significant Earthquakes and Faults, Chronological Earthquake Index, Fort Tejon Earthquake. https://scedc.caltech.edu/significant/forttejon1857.html

U.S. Geological Survey (USGS). 2008. The ShakeOut Scenario. Open-File Report 2008-1150. https://pubs.usgs.gov/of/2008/1150/of2008-1150.pdf

U.S. Geological Survey (USGS). 2019a. California Geologic Map Data. https://mrdata.usgs.gov/geology/state/state.php?state=CA

U.S. Geological Survey (USGS). 2019b. 2008 National Seismic Hazard Maps - Source Parameters. https://earthquake.usgs.gov/cfusion/hazfaults_2008_search/query_main.cfm

U.S. Geological Survey (USGS). 2019c. U.S. Quaternary Faults Database. https://earthquake.usgs.gov/hazards/qfaults/

Walter, E.M. and W.C. Krugh. 2018. High Resolution Mapping of Landslide Deposits Along the Lower Kern River of the Southern Sierra Nevada, CA. https://ui.adsabs.harvard.edu/abs/2018AGUFMEP21C2248W/abstract

Wilkerson, G. 2017. Field Guide, Geology and Mining History of the Kern Canyon, Lake Isabella and Walker Basin, Kern County California. http://www.psaapg.info/cloud/sjgs/2017_Wilkerson.pdf

Wills, C.J., F.G. Perez, and C.I. Gutierrez. 2011. Susceptibility to Deep-Seated Landslides in California. California Geological Survey, Map Sheet 58. ftp://ftp.conservation.ca.gov/pub/dmg/pubs/ms/058/MS_058.pdf

#### *9.1.7.2 Paleontological Resources*

Bureau of Land Management (BLM). 2016. Potential Fossil Yield Classification system: BLM Instruction Memorandum No. 2016-124 (PFYC revised from USFS, 2008).

City of Arvin. 2012. City of Arvin General Plan Update. Available at: http://www.arvin.org/wp-content/uploads/2015/08/ADOPTED_ARVIN_GP_UPDATE_Aug-21-121.pdf

City of Bakersfield. 2007. Metropolitan Bakersfield General Plan EIR. Available at: http://docs.bakersfieldcity.us/weblink/Browse.aspx?startid=602140&dbid=0

City of Tehachapi. 2012. City of Tehachapi General Plan. Available at: http://liveuptehachapi.com/DocumentCenter/View/1227/0_1_TOC?bidId=

County of Los Angeles. 2015. Los Angeles County General Plan. Available at: http://planning.lacounty.gov/generalplan

Dibblee, T.W., Jr. 2005. Geologic Map of the Grapevine/south ½ of Mettler Quadrangles, Kern County, California. Dibblee Geological Foundation Map DF-174, scale 1:24,000.

Dibblee, T.W., Jr. 2006. Geologic Map of the Frazier Mountain & Lebec Quadrangles, Los Angeles, Ventura and Kern Counties, CA. Dibblee Geology Center map no. DF-198, scale 1:24,000.

Dibblee, T.W., Jr. 2008a. Geologic Map of the Arvin & Tejon Hills Quadrangles, Kern County, CA. Dibblee Geology Center map no. DF-416.

Dibblee, T.W., Jr. 2008b. Geologic map of the Edison & Breckenridge Mountain 15 minute quadrangles, Kern County, California. Dibblee Geological Foundation Map DF-419, scale 1:62,500.

Dibblee, T.W., Jr. and G.P. Louke. 1970. Geologic Map of the Tehachapi Quadrangle, Kern County, California. United States Geological Survey, scale 1:62,500.

Dibblee, T.W., Jr. and Warne, A.H. 1970. Geologic Map of the Cummings Mountain Quadrangle, Kern County, California. Miscellaneous geologic investigations map I-611.

Finger, K. 2017. Paleontological records search of unpublished museum records at the University of California Museum of Paleontology. Email dated March 6, 2017.

Kern County. 2009. Kern County General Plan. Available at: https://kernplanning.com/planning/planning-documents/general-plans-elements/

McLeod. S.A. 2019. Paleontological resources for the proposed SCE TLRR Kern River 66kV Update Project, Kern and Los Angeles Counties, project area. Record search conducted by the Natural History Museum of Los Angeles County. Dated 25 October 2019.

McLeod. S.S. 2017. Paleontological resources for the proposed SCE TLRR Kern River 66kV Project, Kern and Los Angeles Counties, project area. Record search conducted by the Natural History Museum of Los Angeles County. Dated 14 August 2017.

Paleo Solutions, Inc. 2017. Paleontological Technical Study: Transmission Line Rating Remediation Licensing – Kern River 66 Kilovolt Project. Unpublished report prepared for SCE; dated October 2017.

Paleo Solutions, Inc. 2019. Addendum: Paleontological Resources Assessment of the Extended Alignments for the Southern California Edison Company Transmission Line Rating Remediation – Kern River 66 Kilovolt Project, Kern and Los Angeles Counties, California. Unpublished report prepared for SCE; dated October 2019.

Smith, A.R. 1964. Geologic map of California: Bakersfield sheet: California Division of Mines and Geology, scale 1:250,000.

Society of Vertebrate Paleontologists (SVP). 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. 11 p. Available at http://vertpaleo.org/PDFS/68/68c554bb-86f1-442f-a0dc-25299762d36c.pdf

### 9.1.8 Greenhouse Gas Emissions

Eastern Kern County Air Pollution Control District (EKAPCD). 2012. Addendum to CEQA Guidelines. Addressing GHG Emission Impacts for Stationary Source Projects When Serving as Lead CEQA Agency. March.

South Coast Air Quality Management District (SCAQMD). 2008. Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans. Located at http://www.aqmd.gov/hb/2008/December/081231a.htm.

### 9.1.9 Hazards and Hazardous Materials

California Department of Parks and Recreation. 1989. Fort Tejon Historic Park General Plan. October. Available online at: https://www.parks.ca.gov/pages/21299/files/351.pdf

CAL FIRE. 2005. Fire Threat Map, Version 5. October 20. Available online at: https://frap.fire.ca.gov/media/10315/firethreat_19_ada.pdf

California Energy Commission. 2020. Natural Gas Pipeline (Diameter Range). ArcGIS Feature Service.

Available online at: https://services9.arcgis.com/C2UkwXxRekdnbbm6/arcgis/rest/services/Natural_Gas_Pipeline_180117/FeatureServer

California Inter-Utility Coordinating Committee. 2010. California Joint Utility Traffic Control Manual, Fifth Edition. April. Available online at: https://www.santabarbaraca.gov/civicax/ filebank/blobdload.aspx?blobid=12060. Retrieved: April 5, 2018.

https://www.santabarbaraca.gov/civicax/ filebank/blobdload.aspx?blobid=12060

California Office of Emergency Services. 2020. Oil_Product_Pipelines. ArcGIS Feature Service. Available online at: https://services.arcgis.com/BLN4oKB0N1YSgvY8/arcgis/rest/services/Oil_ Product_Pipelines/FeatureServer

City of Tehachapi. 2004. Tehachapi Municipal Airport Master Plan Update. Available at https://www.liveuptehachapi.com/DocumentCenter/View/1026

Department of Toxic Substances Control. 2018a. Envirostor, Pacific Pipeline Project – Lebec (60001383). Available online at: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60001383

Department of Toxic Substances Control. 2018b. Envirostor, Pacific Pipeline Project – Tejon Ranch (60001381). Available online at: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_ id=60001381

Kern County Fire Department. 2008. Kern County Emergency Operations Plan. April 30. Available online at: http://www.kerncountyfire.org/operations/divisions/office-of-emergency-services/emergency-plans/emergency-operations-plan.html

Kern County. 2012. Airport Land Use Compatibility Plan. Prepared by: Kern County Planning and Community Development Department. November 13, 2012.

Los Angeles County. 1998. Los Angeles County Operational Area Emergency Response Plan. Available online at: http://www.caloes.ca.gov/AccessFunctionalNeedsSite/Documents/LA%20County%20OA%20Emergency% 20Response%20Plan.pdf

Office of Emergency Services. 2016. State of California Emergency Plan. Available online at: http://www.caloes.ca.gov/PlanningPreparednessSite/Documents/SEP%20Update%20for%20Public%20Comment%202016.pdf

USFS. 1996. Forest Service Manual, Title 6700 - Safety and Health Program, R-4 Supplement No. 6700-96-2. Available online at: https://webcache.googleusercontent.com/search?q=cache:3JHC9js7zMwJ: https://www.fs.fed.us/im/directives/field/r4/fsm/6700/6740.doc+&cd=2&hl=en&ct=clnk&gl=us

USFS. 2016. Standard Operating Procedures for Incident Administration. May. Available online at: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd511723.pdf

USEPA. 2018a. Detailed Facility Report, Grapevine Station. Available online at: https://echo.epa.gov/detailed-facility-report?fid=110008289841

USEPA. 2018b. Detailed Facility Report, Lebec Station. Available online at: https://echo.epa.gov/detailed-facility-report?fid=110008289869

USEPA. 2018c. Detailed Facility Report, Tejon Ranch Company. Available online at: https://echo.epa.gov/detailed-facility-report?fid=110037960150

### 9.1.10 Hydrology and Water Quality

California Department of Fish and Wildlife. 2020. Seeps and Springs, Areas of Conservation Emphasis (ACE), version 3.0. ArcGIS Feature Service. Available online at https://arcadis.maps.arcgis.com/home/item.html?id=2a214bdfc9084425a7e2c7371b6efb18#overview

California Department of Water Resources. 2020. California's Groundwater: Update 2020. Available at https://water.ca.gov/Programs/Groundwater-Management/Bulletin-118#

Central Valley Regional Water Quality Control Board. 2018. Water Quality Control Plan for the Tulare Lake Basin. Available at https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/tlbp_201805.pdf

Kern Groundwater Authority. 2020. Groundwater Sustainability Plan. Available online at http://www.kerngwa.com/assets/kga-umbrella-gsp_final.pdf

Lahontan Regional Water Quality Control Board. 1995. Lahontan Region Basin Plan. Available at https://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/references.html

Los Angeles Regional Water Quality Control Board. 2020. Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties. Available at https://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/basin_plan_documentation.html

### 9.1.11 Land Use and Planning

City of Arvin. 2012. General Plan. Available at http://www.arvin.org/wp-content/uploads/2015/08/ADOPTED_ARVIN_GP_UPDATE_Aug-21-121.pdf

City of Bakersfield. 2002. General Plan. Available at http://www.bakersfieldcity.us/civicax/filebank/blobdload.aspx?BlobID=31381

City of Tehachapi. 2012. General Plan. Available at https://www.liveuptehachapi.com/DocumentCenter/View/3184/Combined-General-Plan-2015-reduced?bidId=

Kern County. 2009. General Plan. Available at https://kernplanning.com/planning/planning-documents/general-plans-elements/

Kern County Board of Supervisors. 2013. Agricultural Preserve Standard Uniform Rules. Available at https://kernplanning.com/?document=1499

Los Angeles County. 2015. General Plan 2035. Available at http://planning.lacounty.gov/assets/upl/project/gp_final-general-plan.pdf

### 9.1.12 Mineral Resources

Busch, Lawrence L. 2004. Update of Mineral Land Classification: Aggregate Materials in the Bakersfield Production-Consumption Region, Kern County, California. California Department of Conservation, California Geological Survey. Special Report 210. Available at ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sr/SR_210/

California Department of Conservation. 2018. Mines Online. Division of Mine Reclamation. Online resource available at https://maps.conservation.ca.gov/mol/index.html

California Department of Conservation, Division of Mines and Geology. Undated. Guidelines for Classification and Designation of Mineral Lands. Available at https://www.conservation.ca.gov/smgb/Guidelines/Documents/ClassDesig.pdf

City of Arvin. 2012. General Plan. Available at http://www.arvin.org/wp-content/uploads/2015/08/ADOPTED_ARVIN_GP_UPDATE_Aug-21-121.pdf

City of Bakersfield. 2002. General Plan. Available at http://www.bakersfieldcity.us/civicax/filebank/blobdload.aspx?BlobID=31381

Kern County. 2009. General Plan. Available at https://kernplanning.com/planning/planning-documents/general-plans-elements/

Koehler, Brett. 1999. Mineral Land Classification of Southeastern Kern County, California. California Department of Conservation, California Geological Survey. Open File Report 99-15. Available at ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/OFR_99-15/

Los Angeles County. 2015. General Plan 2035. Available at http://planning.lacounty.gov/assets/upl/project/gp_final-general-plan.pdf

Miller, Russell V. 1994. Update of Mineral Land Classification of Portland Cement Concrete Aggregate in Ventura, Los Angeles, and Orange Counties, California: Part II, Los Angeles County. California Department of Conservation, California Geological Survey. Open File Report 94-14. Available at ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/OFR_94-14/

### 9.1.13 Noise

California Department of Transportation (Caltrans). 1998. Technical Noise Supplement. Available at http://www.dot.ca.gov/hq/env/noise/pub/Technical%20Noise%20Supplement.pdf.

City of Arvin. 2012. General Plan. Available at http://www.arvin.org/wp-content/uploads/2015/08/ADOPTED_ARVIN_GP_UPDATE_Aug-21-121.pdf

City of Arvin. 2008. General Plan Noise Element. Available at http://www.arvin.org/wp-content/uploads/2019/02/General-Plan-Feb-2019-Part-1-of-2.pdf

City of Bakersfield. 2002. Metropolitan Bakersfield General Plan. Available at http://www.bakersfieldcity.us/civicax/filebank/blobdload.aspx?BlobID=31381

City of Hermosa Beach. 2015. Final Environmental Impact Report: E&B Oil Drilling & Production Project. Available at http://www.hermosabch.org/index.aspx?page=755

County of Los Angeles. 2015. General Plan 2035. Available at http://planning.lacounty.gov/generalplan/generalplan

City of Tehachapi. 2012. General Plan. Available at https://liveuptehachapi.com/DocumentCenter/View/3184/Combined-General-Plan-2015-reduced?bidId=

Federal Transit Administration. 2006. Transit Noise and Vibration Impact Assessment, Report Number FTA-VA-90-1003-06. Available at https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf

Kern County. 2018. Draft Environmental Impact Report, SCH# 2017031009: Recology Blossom Valley Organics– South (BVOS). Available at https://psbweb.co.kern.ca.us/UtilityPages/Planning/EIRS/recology/DEIR/recology_deir_vol1.pdf

Kern County. 2012. Airport Land Use Compatibility Plan. Available at https://www.kerncounty.com/planning/pdfs/ALUCP2012.pdf

Kern County. 2009. General Plan. Available at http://pcd.kerndsa.com/planning/planning-documents/general-plans

U.S. Forest Service. 2008. Sound Measurements of Helicopters during Logging Operations at Southwestern Oregon Timber Sales. Available at https://www.fs.fed.us/eng/techdev/IM/sound_measure/helo_index.shtml

### 9.1.14 Population and Housing

State of California. 2018. Demographics Projections. Department of Finance. Data available at http://www.dof.ca.gov/Forecasting/Demographics/Projections/

United States Census Bureau. 2019. S1701, Poverty Status in the Past 12 Months. 2013-2017 American Community Survey 5-Year Estimates. Data accessed at https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t

United States Census Bureau. 2012. DP-1: Profile of General Population and Housing Characteristics: 2010. 2010 Census Summary File 1. Data accessed at https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t

### 9.1.15 Public Services

California Inter-Utility Coordinating Committee. 2018. California Temporary Traffic Control Handbook. Available at https://www.sce.com/nrc/aboutsce/regulatory/distributionmanuals/tcm.pdf

County of Los Angeles. Undated. Los Angeles Fire Department Response Time Lag. Available at http://clkrep.lacity.org/onlinedocs/2015/15-0719_pc_4_8-10-15.pdf

Douglas, Theo. 2015. “Police response times improving citywide.” The Bakersfield Californian. October 31. Available at https://www.bakersfield.com/archives/police-response-times-improving-citywide/article_5152eef0-335a-5c1b-a48e-4ab8fcb1076c.html

Kern County. 2019. Grapevine Project Final Environmental Impact Report including Appendices and Attachments. Available at https://psbweb.co.kern.ca.us/UtilityPages/Planning/EIRS/grapevine_sreir/Vol5/Grapevine-1-11_DEIR.pdf

Kern County. 2010. Parks and Recreation Master Plan. Available at https://www.kerncounty.com/gsd/parks/pdf/master-plan.pdf

Kern County. 2009. Kern County General Plan, Land Use, Open Space, and Conservation Element. Available at http://www.co.kern.ca.us/planning/pdfs/kcgp/KCGP.pdf

Kern County Fire Department (KCFD). 2017. Kern County Fire Department – About Us Webpage. Available at http://kerncountyfire.org/about-us.html

Kern County Sheriff's Office (KCSO). 2017. Human Resources Webpage. Available at http://www.kernsheriff.org/human_resources.aspx

Kern County Superintendent of Schools (KCSS). 2017. …at a glance Webpage. Available at http://kern.org/wp-content/uploads/sites/11/2017/02/at-a-glance-Barlow.pdf

Los Angeles County Fire Department. 2016. 2016 Statistical Summary. Available at https://www.fire.lacounty.gov/wp-content/uploads/2017/06/2016-Stat-Summary.pdf

Los Angeles County. 2015. Los Angeles County General Plan.

### 9.1.16 Recreation

California Department of Parks and Recreation. 1989. Fort Tejon State Historic Park General Plan. Available at https://www.parks.ca.gov/pages/21299/files/351.pdf

California State Parks. 2016. Fort Tejon State Historic Park Brochure. Available at https://www.parks.ca.gov/?page_id=585

California State Parks. Undated. Statistical Report: 2016/2017 Fiscal Year. Available at https://www.parks.ca.gov/pages/795/files/16-17%20Statistical%20Report%20FINAL%20for%20web.pdf

City of Arvin. 2014. City of Arvin Zoning Map. Available at http://www.arvin.org/wp-content/uploads/2015/09/Arvin-Zoning-Map.pdf

City of Arvin. 2012. City of Arvin General Plan Update. Available at http://www.arvin.org/wp-content/uploads/2015/08/ADOPTED_ARVIN_GP_UPDATE_Aug-21-121.pdf

Kern County. 2009. Kern County General Plan—Land Use, Open Space, and Conservation Element. Available at http://www.co.kern.ca.us/planning/pdfs/kcgp/KCGP.pdf

Kern County. 2010. Parks and Recreation Master Plan. Available at https://www.kerncounty.com/gsd/parks/pdf/master-plan.pdf

Los Angeles County. General Plan 2035. Mobility Element, Conservation and Natural Resources Element, Park and Recreation Element, and Figures. Available at http://planning.lacounty.gov/generalplan/generalplan

United States Forest Service. 2016. Draft Revised Land Management Plan for the Sequoia National Forest. Available at http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/3403_FSPLT3_3083748.pdf

United States Forest Service. 2005. Land Management Plan Part 1: Southern California National Forests Vision. Available at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5166876.pdf

### 9.1.17 Transportation

American Passenger Rail Heritage Foundation. 2017. Railroad Map of Kern County, California. Available at: http://www.trainweb.org/KernJunction/map.htm

California Department of Transportation (Caltrans). 2016. Truck Networks on California State Highways. Available at: http://www.dot.ca.gov/trafficops/trucks/docs/truckmap-d06.pdf

Caltrans. 2015. Bicycle Guide for District 6 and Complete Streets Elements. Available at https://dot.ca.gov/caltrans-near-me/district-6/district-6-programs/d6-bicycle-complete-streets

Caltrans. 2002. Guide for the Preparation of Traffic Impact Studies.

California Inter-Utility Coordinating Committee. 2014. California Joint Utility Traffic Control Manual. February 2014. 6th Addition.

Kern County. 2012. Airport Land Use Compatibility Plan. Available at https://www.kerncounty.com/planning/pdfs/ALUCP2012.pdf

Kern County. 2009. Kern County General Plan. Bakersfield, CA: Kern County Planning and Community Development Department. Webpage: http://www.co.kern.ca.us/planning/pdfs/kcgp/KCGP.pdf

Kern Council of Governments (Kern COG). 2020. Transportation Data Management System. Accessed at https://kerncog.ms2soft.com/tcds/tsearch.asp?loc=kerncog

Kern COG. 2018. 2018 Regional Transportation Plan and Sustainable Communities Strategy. Available at https://www.kerncog.org/wp-content/uploads/2018/10/2018_RTP.pdf

Kern COG. 2012. Kern County Bicycle Master Plan and Complete Streets Recommendations. Volume 1: Bicycle Master Plan. Available at http://www.ca-ilg.org/sites/main/files/file-attachments/2012_bicyclemasterplan_i.pdf

Kern COG. 2014. 2014 Regional Transportation Plan/Sustainable Communities Strategy. Available at https://ww3.arb.ca.gov/cc/sb375/kerncog_2014_rtp.pdf

Kern Regional Transit. 2017. Routes and Schedules. Available at http://kerntransit.org/routes-and-schedules/

Los Angeles County. 2020. Open Data Website. Available at https://data.lacounty.gov/dataset/Total-and-Average-Daily-per-Capita-Vehicle-Miles-T/ba5z-qxm7

Los Angeles County. 2018. Transportation Briefing. Available at https://ourcountyla.lacounty.gov/wp-content/uploads/2018/08/Our-County-Transportation-Briefing_For-Web.pdf

Los Angeles County. 2015. Los Angeles County General Plan. Available at http://planning.lacounty.gov/assets/upl/project/gp_final-general-plan.pdf

Los Angeles County Department of Public Works. 2020. Machine Count Traffic Volume for Gorman Post Road. Accessed at https://dpw.lacounty.gov/tnl/trafficcounts/

Los Angeles County Metropolitan Transportation Authority. 2010. 2010 Congestion Management Program. Available at http://media.metro.net/docs/cmp_final_2010.pdf

Southern California Association of Governments. 2016. The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy. Available at http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx

State of California. 2017. California Legislative Information; Streets and Highways Code. Available at https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=SHC&division

### 9.1.18 Tribal Cultural Resources

Beebe, R. M., and R. M. Senkewicz (Editors). 2001. Lands of Promise and Despair: Chronicles of Early California, 1535-1846. Heyday Books, Berkeley, California.

Beebe, R. M., and R. M. Senkewicz. 2007. "Revolt at Mission San Gabriel, October 25, 1785: Judicial Proceedings and Related Documents." Boletín, California Mission Studies Association 24(2):15-30.

Bernard, J.L. 2008. An Archaeological Study of Resistance, Persistence, and Culture Change in the San Emigdio Canyon, Kern County California. PhD dissertation, University of California, Los Angeles.

Biosystems Analysis, Inc. 1989. Technical Report of Cultural Resources Studies for the Proposed Wtg-west, Inc. Los Angeles to San Francisco and Sacramento, California Fiber Optic Cable Project

Blackburn, T. C. and L. J. Bean. 1978. "Kitanemuk". In Handbook of North American Indians, Volume 8, California. William C. Sturtevant, general editor, Robert F. Heizer, volume editor, pp. 564-569. Washington D.C.: Smithsonian Institution.

California Office of Historic Preservation (OHP). 2013. Kern County California Historical Landmarks, No. 130, Willow Springs. Available at http://ohp.parks.ca.gov/?page_id=21423. Last accessed September 25, 2020.

Castillo, E. 1989. "The Native Responses to the Colonization of Alta California." In Columbian Consequences, Volume 1: Archaeological and Historical Perspectives on the Spanish Borderlands West, edited by David Hurst Thomas, pp. 377-94. Smithsonian Institution Press, Washington, D.C.

Comfort, H. G. 1934. "The Founding of Fort Tejon". In Where Rolls the Kern: A History of Kern County. Moorpark, CA: Enterprise Press.

Gatto, M. 2014. California Assembly Bill No. 52, Chapter 532. Approved by Governor September 25, 2014; filed with secretary of State September 25, 2014.

Grant, C. 1978. "Interior Chumash." In Handbook of North American Indians, Vol 8: California. edited by R. F. Heizer. pp 530-534. Washington D.C: Smithsonian Institute.

Hackel, S.W. 2003. "Sources of Rebellion: Indian Testimony and the Mission San Gabriel Uprising of 1785." Ethnohistory 50(4):643-669.

Harvey, V. 2011. Archaeological Investigations at the Hospital/Commissary Site, Fort Tejon State Historic Park, Kern County, California, Master's thesis, California State University, Bakersfield.

Hornbeck, D. 1989. "Economic Growth and Change at the Missions of Alta California, 1769-1846." In Columbian Consequences, Volume 1: Archaeological and Historical Perspectives on the Spanish Borderlands West, edited by David Hurst Thomas, pp. 423-434. Smithsonian Institution Press, Washington, D.C.

Horne, S. P. 1981. The Inland Chumash: Ethnography, Ethnohistory, and Archeology. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Santa Barbara.

Johnson, J. R. 1978. The Trail to Kashtiq. Journal of California Anthropology 5(2):188-198.

Johnson, J. R. 1997. "Indians of Mission San Fernando, who later lived at Rancho El Tejón." Extracted from "Indians of Mission San Fernando." In Mission San Fernando Rey de Espana, 1797-1997, edited by

D. B. Nunis Jr. Historical Society of Southern California Quarterly. 79(3). pp 249-290. Available online at: http://www.vredenburgh.org/tehachapi/data/tejon01.htm#35. Last accessed December 22, 2017.

Johnson, J. R. 2000. Mat'apxwelxwel Ethnohistory. In Archaeological Passages: A Volume in Honor of Claude Nelson Warren, Vol. 1, edited by Joan S. Schneider, Robert M. Yohe II, and Jill K. Gardner, pp. 24-39. Western Center for Archaeology and Paleontology Publications in Archaeology No. 1. Hemet, California.

Johnson, J.R. and D.D. Earle. 1990. "Tataviam Geography and Ethnohistory". Journal of California and Great Basin Anthropology. 12(2): 191-214.

King, C. and T.C. Blackburn. 1978. "Tataviam." In Handbook of North American Indians, Volume 8, California. William C. Sturtevant, general editor, R. F. Heizer, volume editor, pp. 564-569. Washington D.C.: Smithsonian Institution.

King, C., Smith, C., and King, T. 1974. Archaeological Report Related to the Interpretation of Archaeological Resources Present at Vasquez Rocks County Park. MS on file at the Department of Parks and Recreation, Los Angeles County).

Kroeber, A.L. 1976. Handbook of Indians of California. Reprint of 1925 original edition, Dover Publications, New York.

Latta, F. F. 1949. Handbook of the Yokuts Indians. Santa Cruz: Bear State Books

Lee, G., and W. D. Hyder. 1991. "Prehistoric Rock Art as an Indicator of Cultural Interaction and Tribal Boundaries in South-central California." Journal of California and Great Basin Anthropology 13(1):15–28.

Mason, R.D., Bonner, W.H., Popper, S.L., Popper, V.S., Origer, T.M., and Shackely, M.S. 2001. Results of Archaeological Data Recovery at CA-KER-3367, CA-KER-3370, and CA-KER-1558 Level (3) Long Haul Project, Segment WS04 Tehachapi Workaround, Kern County, California. Prepared for Level (3) Project Office.

McGuire, K., Glover, L., Berg, J., and Riggs, D. 1990. A Cultural Resources Inventory and Limited Evaluation of the Proposed Mojave Pipeline Corridor in California and Arizona. Prepare for Woodward-Clyde Consultants.

Mithun, M. 2006. The Languages of Native North America. Reprinted. Cambridge University Press, Cambridge, Massachusetts. Originally published 1999, Cambridge University Press, Cambridge, Massachusetts.

Monastero, A.P., Lloyd, J.B., and Armstrong, M.D. 2014. Cultural Resource Studies for the Redwood Cluster Solar Project, Kern County, California. Prepared for 61LK 8ME, LL.

Moratto, M. J. 1984. California Archaeology. Orlando: Academic Press.

Pearce, D., Stritthold, J., Watt, T., and Elkind, E. 2016. A Path Forward: Identifying Least-Conflict Solar PV Development in California's San Joaquin Valley. Center for Law, Energy & the Environment Publications, Paper 1.

Sandos, J. A. 1998. "Between Crucifix and Lance: Indian-White Relations in California, 1769-1848." In Contested Eden: California Before the Gold Rush, edited by Ramon Gutierrez and Richard Orsi, pp. 196-229. University of California Press, Berkeley and Los Angeles.

Sandos, J. A. 2007. “Toypurina’s Revolt: Religious Conflict at Mission San Gabriel in 1785.” Boletín, California Mission Studies Association 24(2):4-14.

Stickel, E. G., and A. E. Cooper. 1969. “The Chumash Revolt of 1824: A Case for Archaeological Application of Feedback Theory.” UCLA Archaeological Survey Annual Report 11:5-21.

Sutton, M.Q. 1980. “Some Aspect of Kitanemuk Prehistory”. Journal of California and Great Basin Anthropology 2(2): 214-225.

Sutton, M.Q. 2001. “Excavations at Teddy Bear Cave (CA-KER-508), Tomo-Kahni State Park, Southern Sierra Nevada, California. Pacific Coast Archaeological Society Quarterly 37(1): 1-26.

Underwood, J. 2006. “Discovering the Desert Kawaiisu.” In A Festschrift Honoring the Contributions of California Archaeologist Jay van Werlhof, edited by R. L. Kaldenberg, pp. 179–191. Maturango Museum Publication No. 20.

Walker, A.M. 1946. Francisco Garcés Pioneer Padre of Kern. Kernville: Kern County Historical Society.

Zigmond, M.L. 1986. “Kawaiisu”. In Handbook of North American Indians, Vol. 11 Great Basin, W.L. d’Azenedo, ed., pp. 398-411. Washington: Smithsonian Institution.

### 9.1.19 Utilities and Service Systems

Arvin Community Services District. 2010 Urban Water Management Plan. Available at https://water.ca.gov/LegacyFiles/urbanwatermanagement/2010uwmps/Arvin%20Community%20Services%20District/ARVIN%20CSD%20FINAL%20UWMP%205-1-2015.pdf

California Department of Resources Recycling and Recovery (CalRecycle). 2019. Multi-year Countywide Origin Summary. Data for Kern County and Los Angeles County. Available at https://www2.calrecycle.ca.gov/LGCentral/DisposalReporting/Origin/CountywideSummary

CalRecycle. 2018a. Disposal Facility Annual Capacity Analysis for Kern County. Available at http://www.calrecycle.ca.gov/FacIT/facility/disposalgap.aspx

CalRecycle. 2018b. Disposal Facility Annual Capacity Analysis for Los Angeles County. Available at http://www.calrecycle.ca.gov/FacIT/facility/disposalgap.aspx

California Department of Water Resources. 2016. Bulletin 118: Interim Update 2016. Available at https://water.ca.gov/Programs/Groundwater-Management/Bulletin-118

California Water Service. 2016. 2015 Urban Water Management Plan: Bakersfield District. Available at https://www.calwater.com/docs/uwmp2015/bk/2015_Urban_Water_Management_Plan_Final_(BK).pdf

The INGAA Foundation, Inc. 2015. Criteria for Pipelines Co-Existing with Electric Power Lines. Available at https://www.ingaa.org/File.aspx?id=24732

Kern County. 2017a. Sewer Information. Kern County Waste Management. Available at http://www.kerncountywaste.com/sewer-information

Kern County. 2017b. Disposal Sites Overview. Kern County Waste Management. Available at http://www.kerncountywaste.com/disposal-sites

Kern County. 2011. Kern Integrated Regional Water Management Plan. Available at http://www.kernirwmp.com/documents/2011/KCWA_FinalUpdate_IRWMP_112911.pdf

Kern County. 2010. Greater Tehachapi Area Specific and Community Plan. Available at https://www.kerncounty.com/planning/pdfs/SPs/gtasp_final.pdf

Kern County. 2009. Kern County General Plan – Energy Element. Available at http://www.co.kern.ca.us/planning/pdfs/kcgp/KCGP.pdf

Los Angeles County. 2017. Fact Sheet: Chiquita Canyon Landfill. Department of Public Works. Solid Waste Information Management System. Available at https://dpw.lacounty.gov/epd/swims/Site/factsheet-esri.aspx?id=7

Los Angeles County. 2015. Los Angeles General Plan. Available at http://planning.lacounty.gov/assets/upl/project/gp_final-general-plan.pdf

State of California. 2017. What is IRWM?. State of California, California Department of Water Resources. Available at http://www.water.ca.gov/irwm/

State of California. 2013. 2014-2018 Strategic Plan – Fixing the Foundation – Building a Path Forward. Prepared by the Department of Toxic Substances Control

State of California. 2010. Central Valley Regional Board Brochure – Region 5. State of California, Regional Water Quality Control Board

Tehachapi-Cummings County Water District. 2019a. Forty-Fifth Annual Report Tehachapi Basin Watermaster (For Calendar Year 2018). Available at https://drive.google.com/file/d/1N_HZUM3LKmtfzSHmL1Tml7coG_j6pXl8/view

Tehachapi-Cummings County Water District. 2019b. Report of Tehachapi-Cummings County Water District as Watermaster for Calendar Year 2018. Available at https://drive.google.com/file/d/17M1fSKQ417Uj_s_jT0Gh8kNjo3qx3kdZ/view

Tehachapi Water Availability Preservation Committee. 2015. Greater Tehachapi Are Regional Urban Water Management Plan. Available at http://www.liveuptehachapi.com/DocumentCenter/View/3308/RUWMP-Draft?bidId=

U.S. Environmental Protection Act (USEPA). 2004. Understanding the Safe Drinking Water Act. Office of Water. EPA 816-F-04-030.

### 9.1.20 Wildfire

Kern County and City of Bakersfield. 2009. Lake Isabella Dam Failure Evacuation Plan. Attachment 3. Available at https://www.kerncountyfire.org/images/stories/emergency_preparedness/EvacuationZonesandRoutes.pdf

Kern County Fire Department. 2012. Multi Jurisdiction Hazard Mitigation Plan Comprehensive Update 2012. Available online at http://www.kerncountyfire.org/operations/divisions/office-of-emergency-services/emergency-plans/hazard-mitigation-plan.html

Kern County Fire Department. 2008. Emergency Operations Plan. Available online at http://www.kerncountyfire.org/operations/divisions/office-of-emergency-services/emergency-plans/emergency-operations-plan.html

Los Angeles County. 2014. All Hazard Mitigation Plan. Available at https://ceo.lacounty.gov/wp-content/uploads/OEM/hazmitgplan.pdf

Los Angeles County. 2011. Operational Area Emergency Response Plan. Available at https://ceo.lacounty.gov/emergencydisaster-plans-and-annexes/

National Park Service. 2020. Final wildfire perimeters from authoritative agency datasets. Wildland Fire Management Research, Development, & Application program data team. ArcGIS Feature Service. Available at https://services3.arcgis.com/T4QMspbfLg3qTGWY/arcgis/rest/services/Interagency_Fire_Perimeter_History_All_Years_Read_Only/FeatureServer

## 9.2 Electronic References

References listed in Section 9.1 that are available electronically are so-noted above; all references listed above are available free of charge. SCE will provide to the CPUC electronic or hardcopy versions of references cited in Section 9.1 upon request.